VOL. XLVII. No. 12 DECEMBER 1962

MECCANO MAGAZINE

1/3

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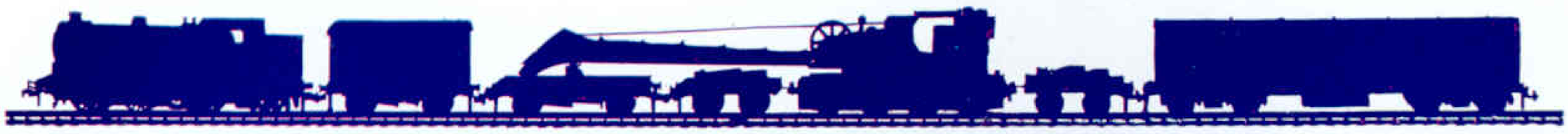

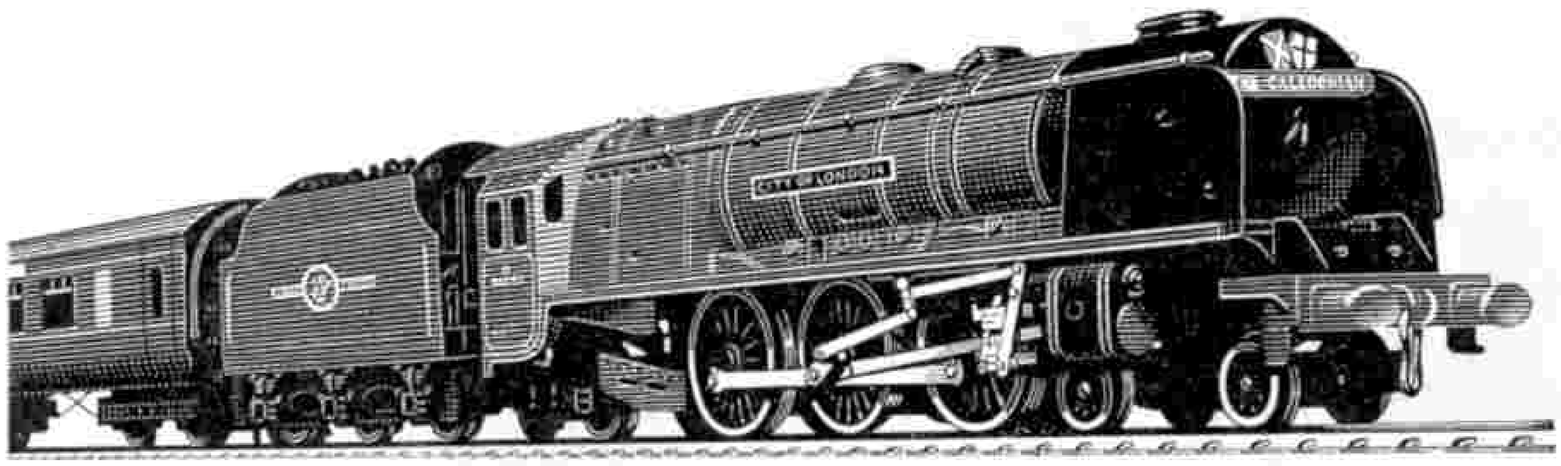

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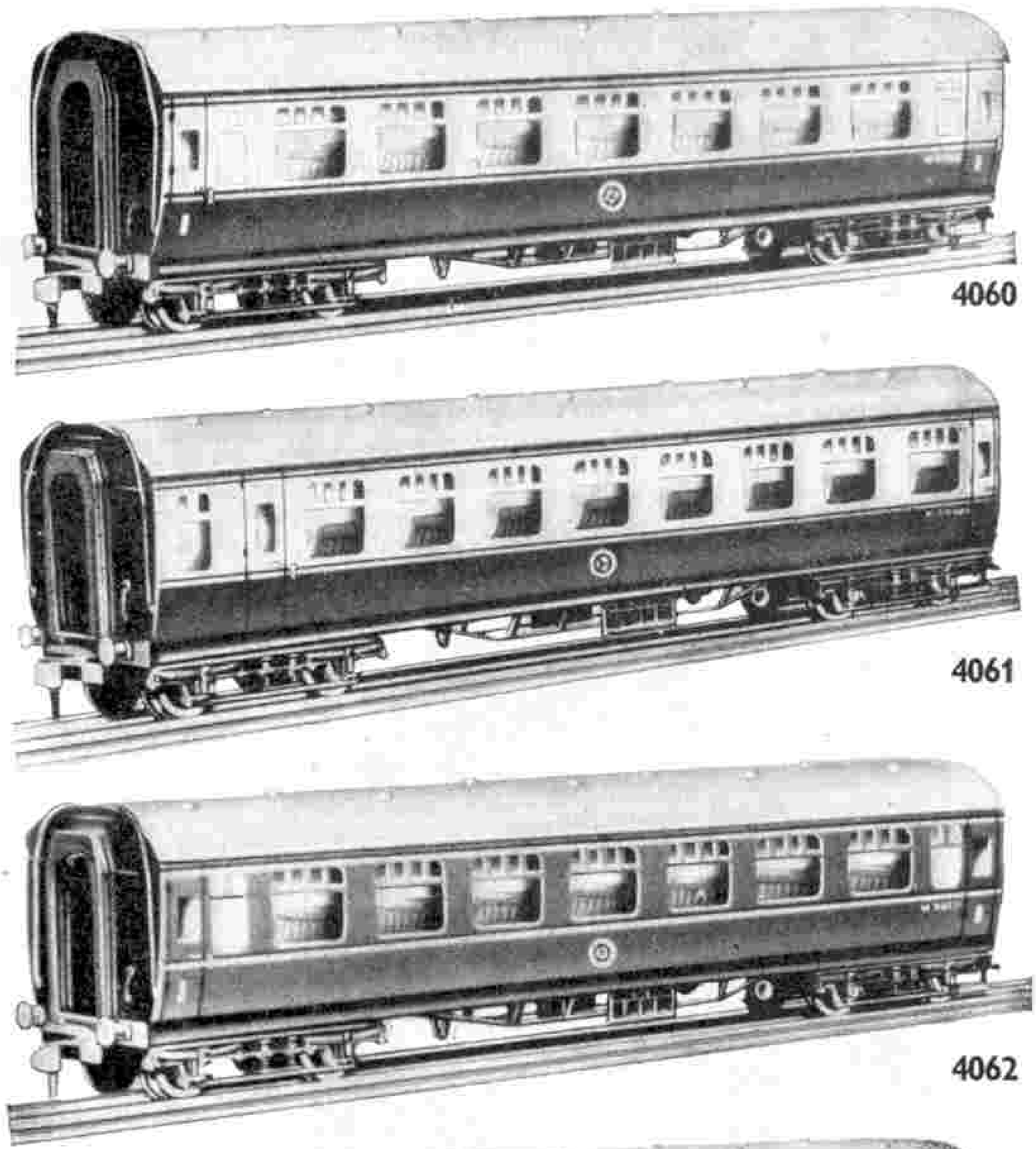

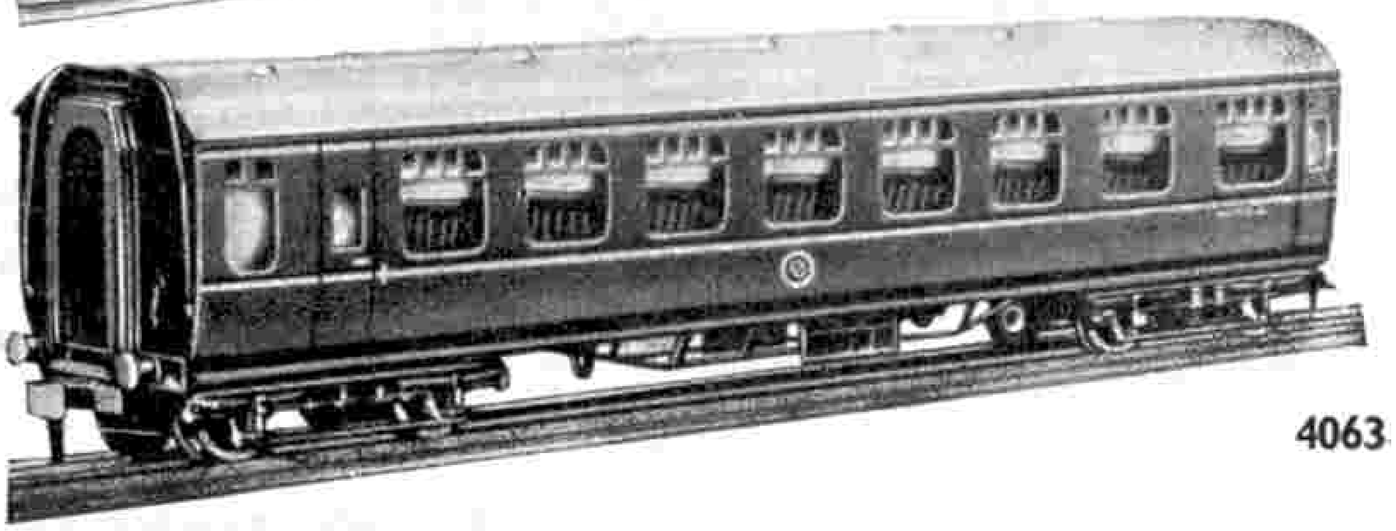

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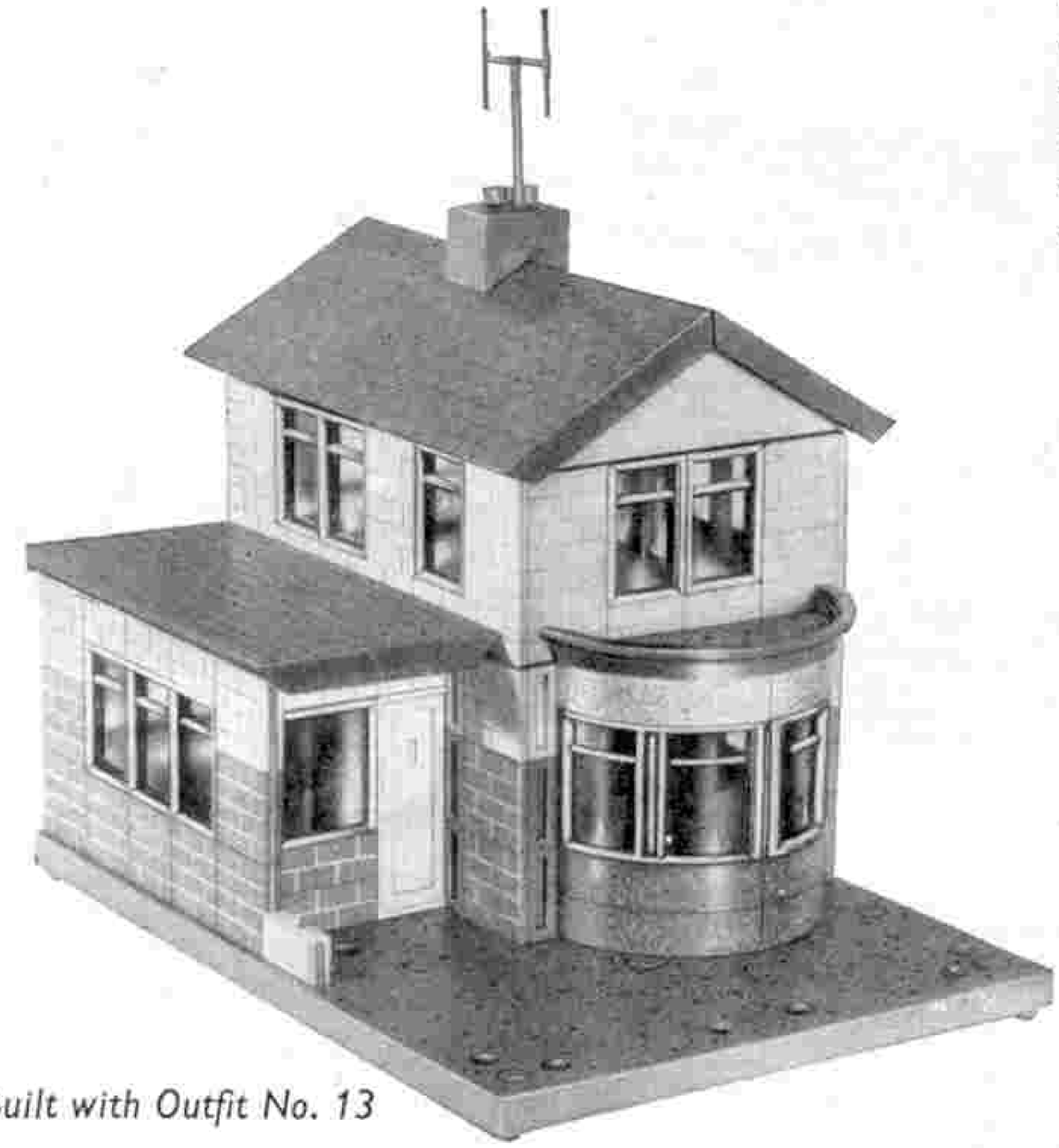

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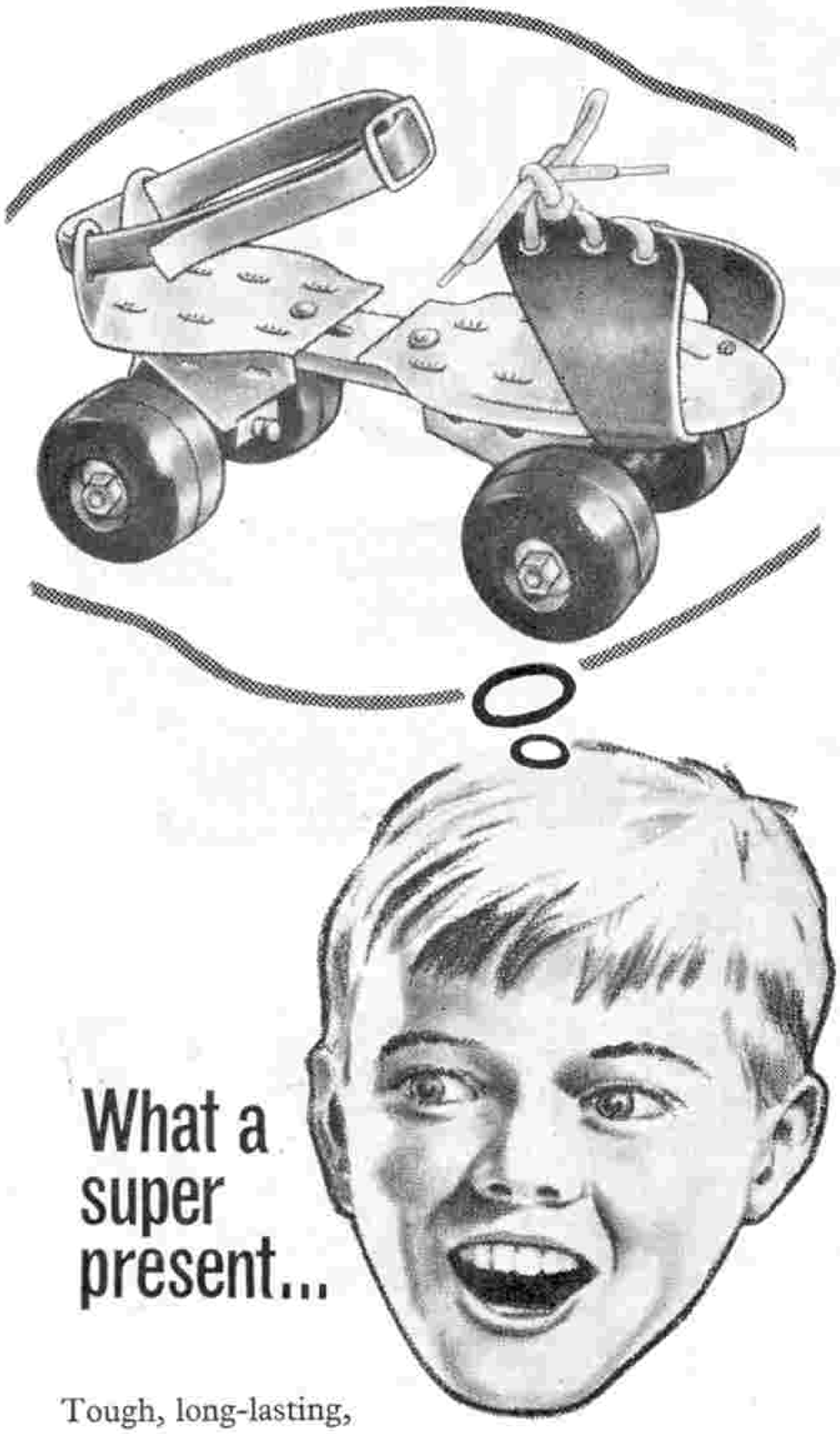

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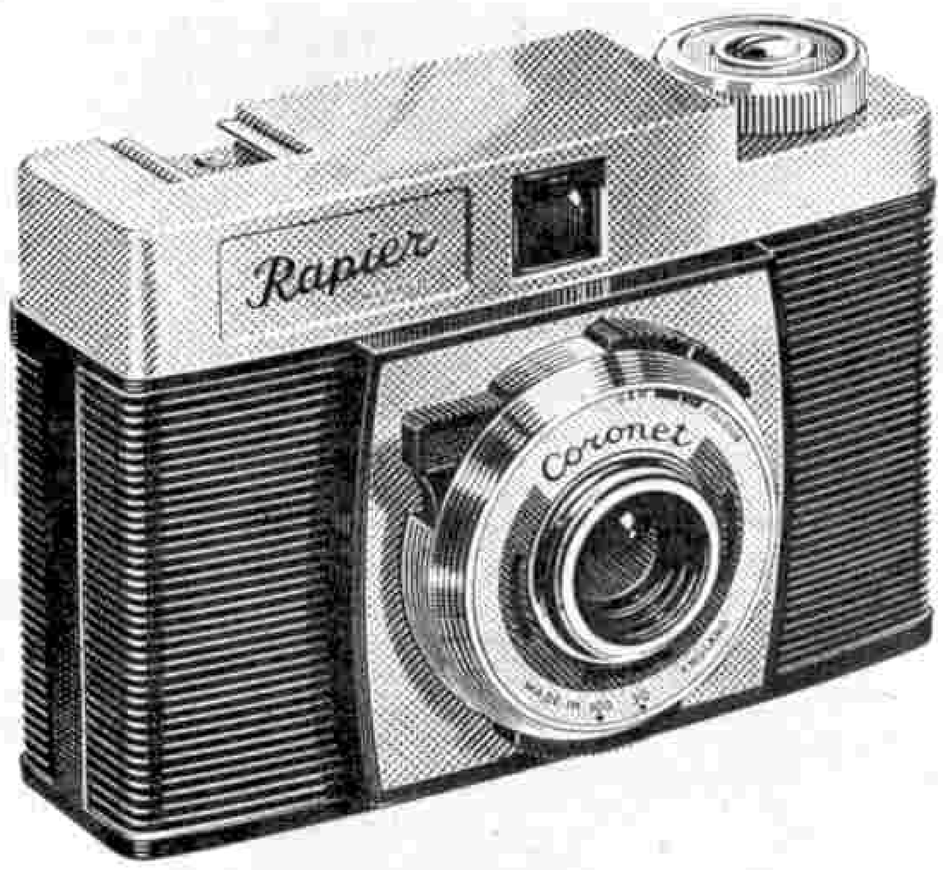

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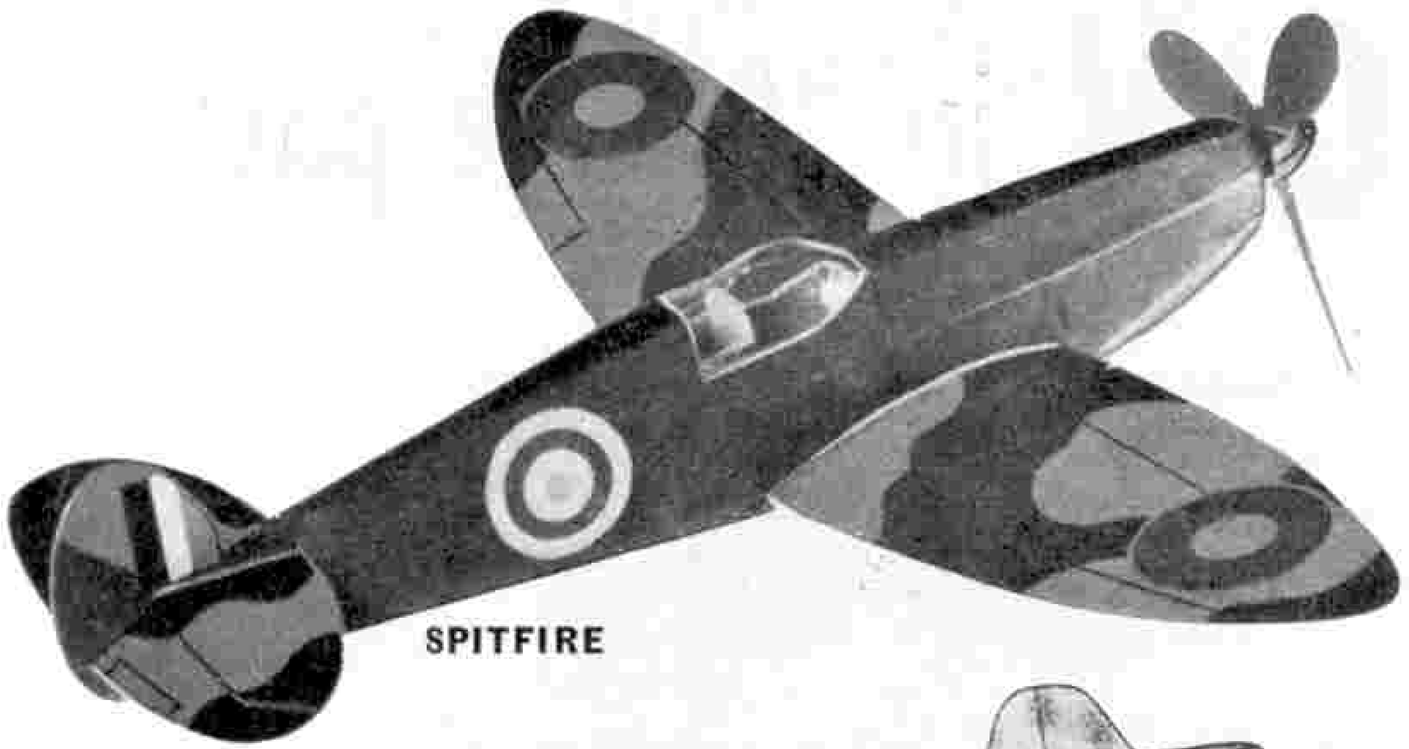

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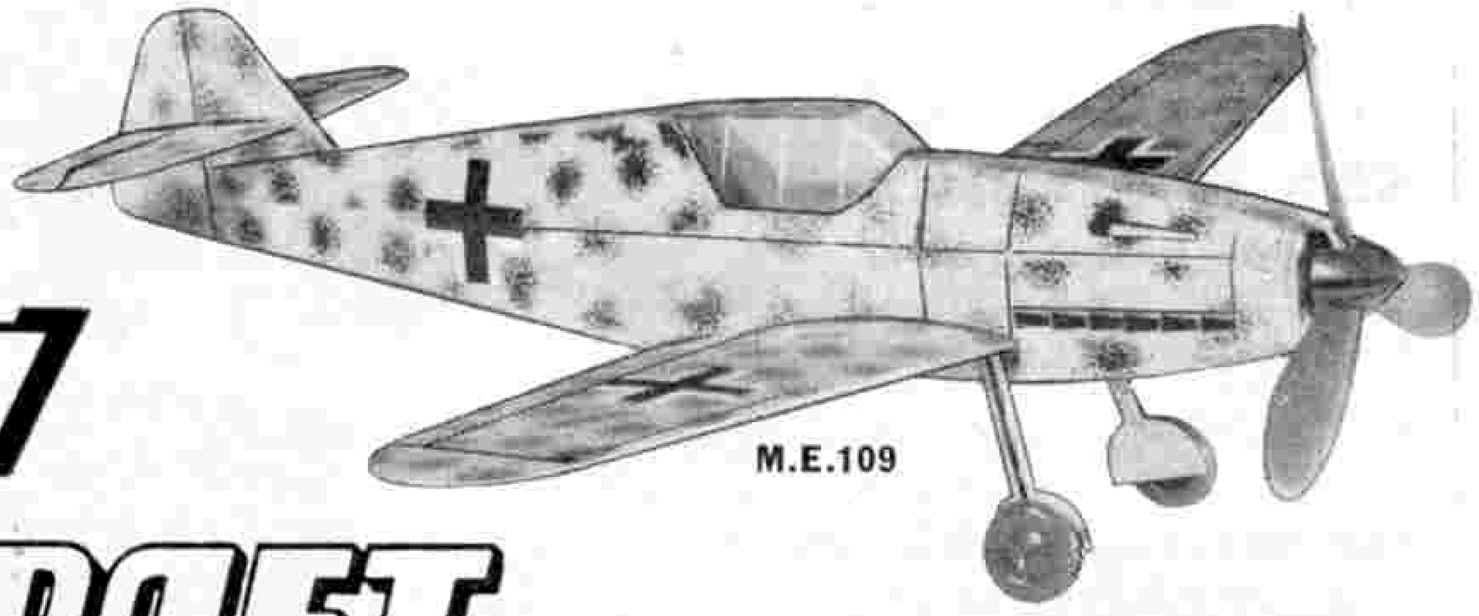

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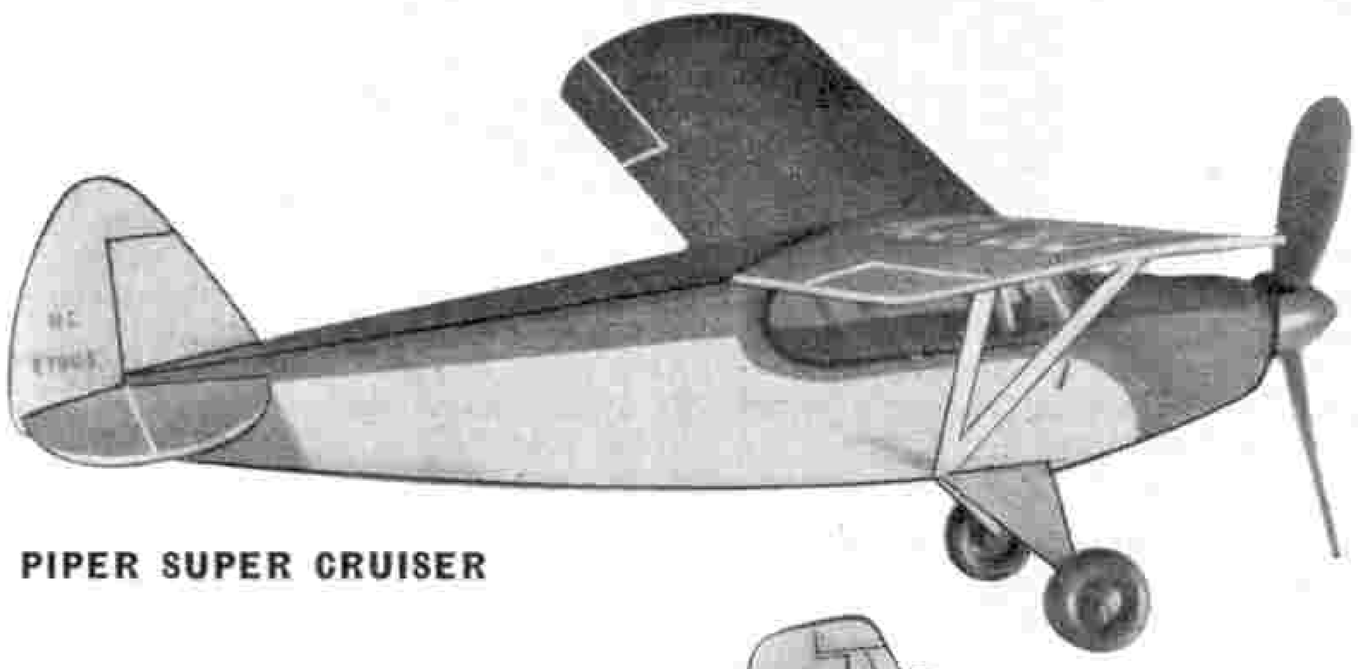

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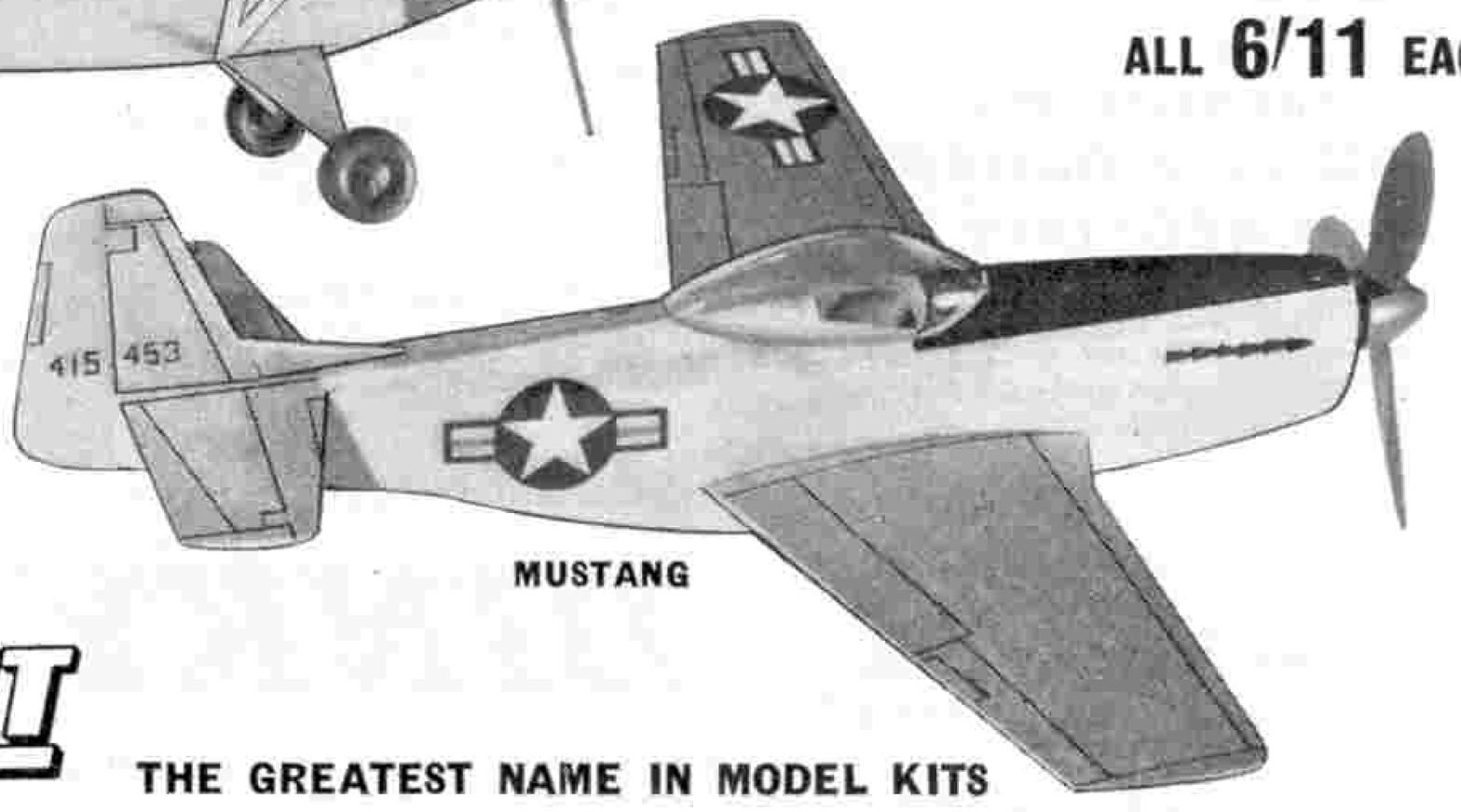

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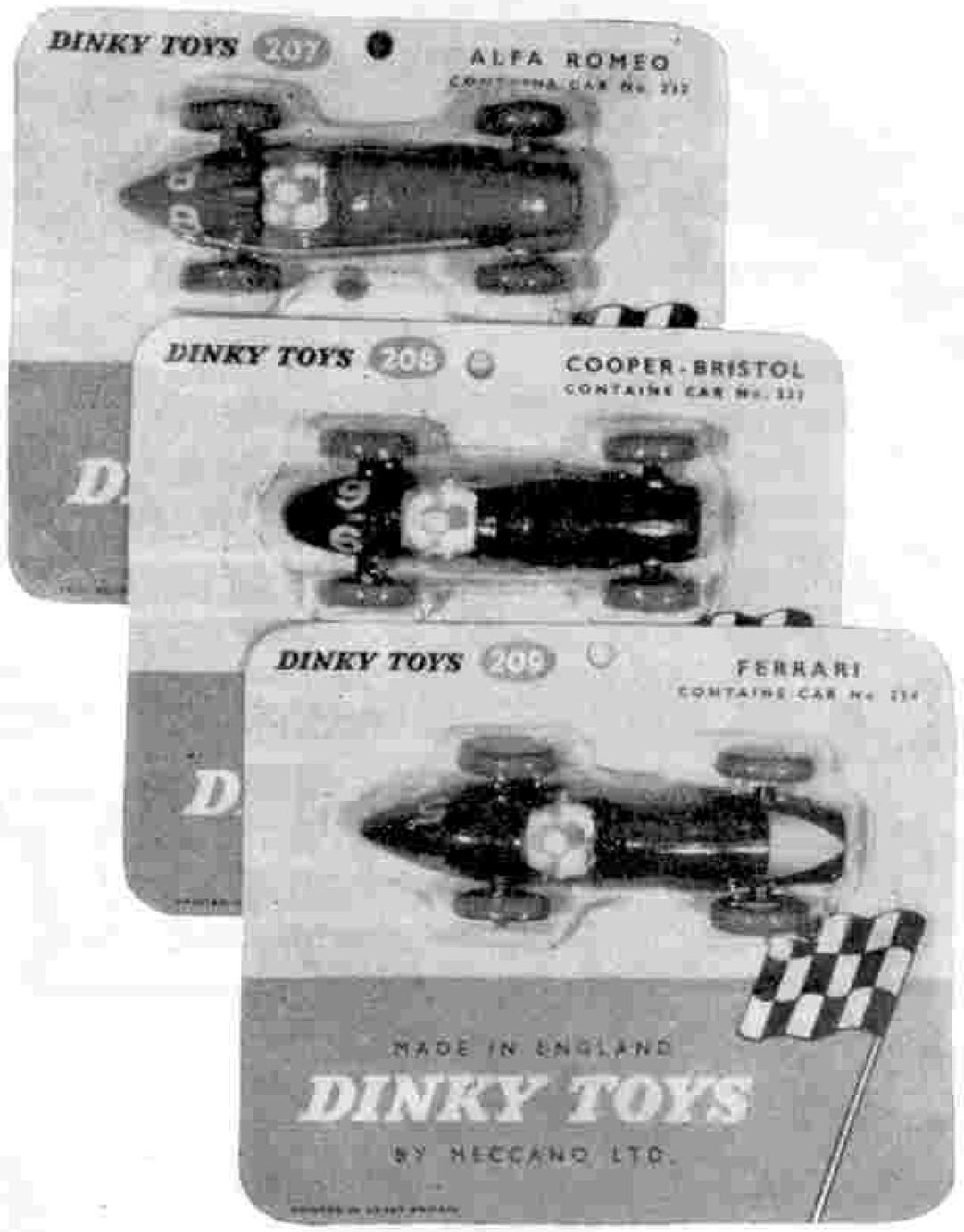

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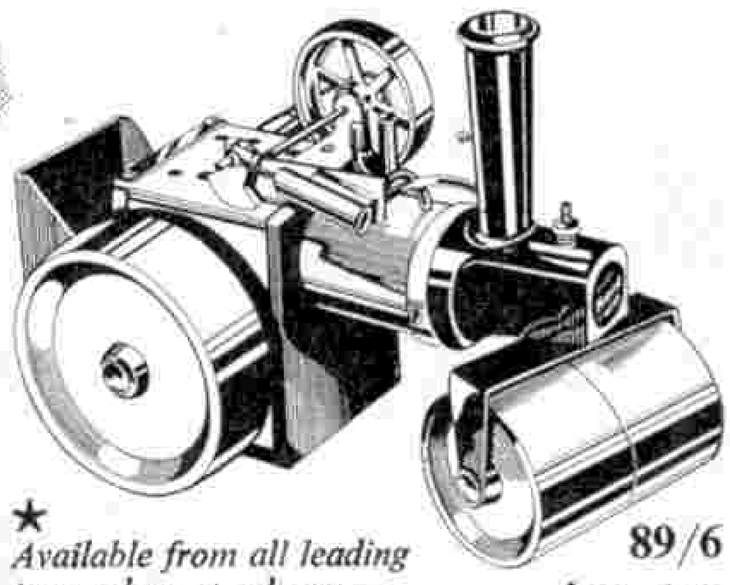

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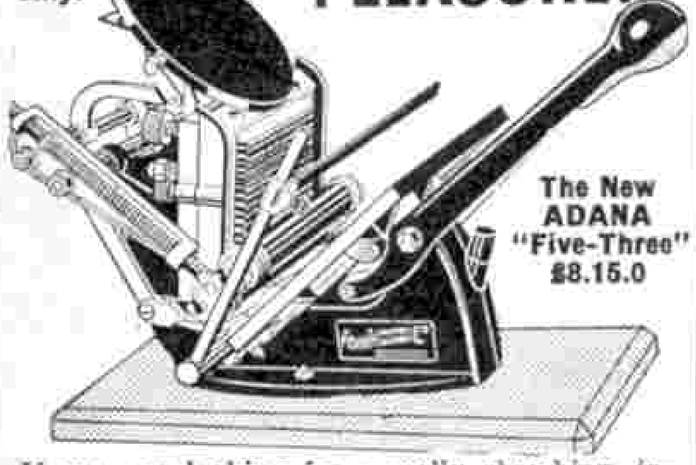

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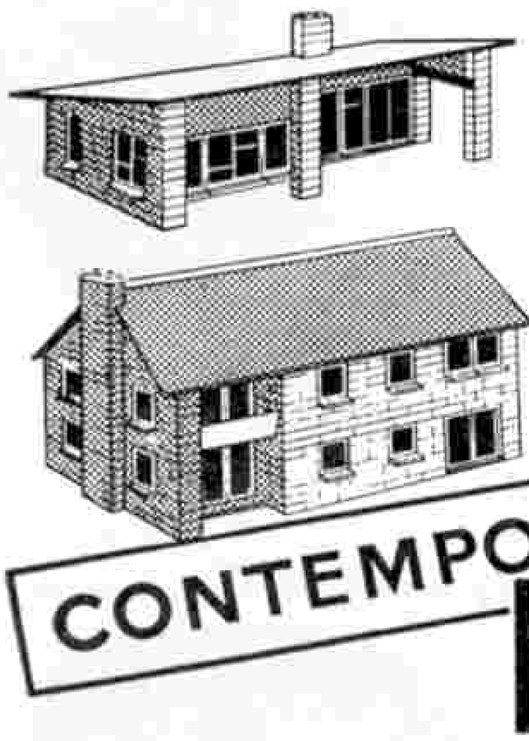

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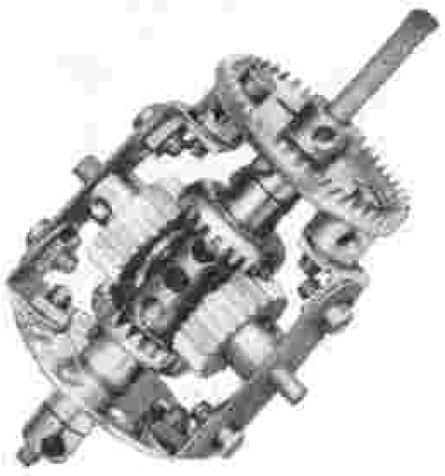
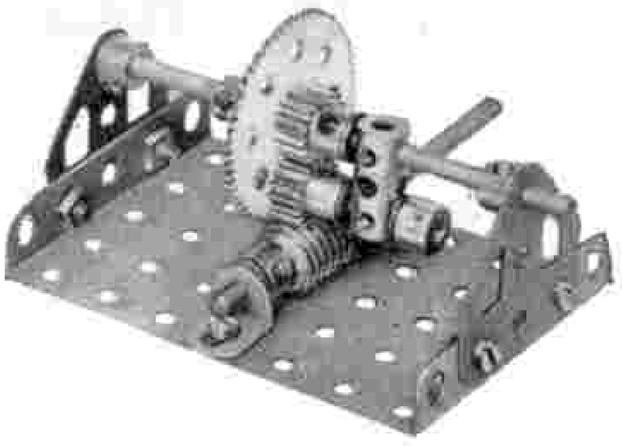
This Outfit may be used independently or with a standard Meccano Outfit. U.K. Price £1.12s.11d.



No. 20 Differential Mechanism for Motor Vehicle



No. 5 Intermittent Motion Mechanism

In the field of engineering there are basic mechanisms and movements that can be applied in a variety of ways in many different models. A good understanding of these mechanisms and their functions is valuable in building realistic working models with Meccano, and the Mechanisms Outfit offers an ideal way of gaining this knowledge. This Outfit is complete in itself, but is designed for building mechanisms only. These mechanisms can be modified as desired for use in Meccano models of all kinds.

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MECCANO MAGAZINE

Volume XLVII No. 12 December 1962

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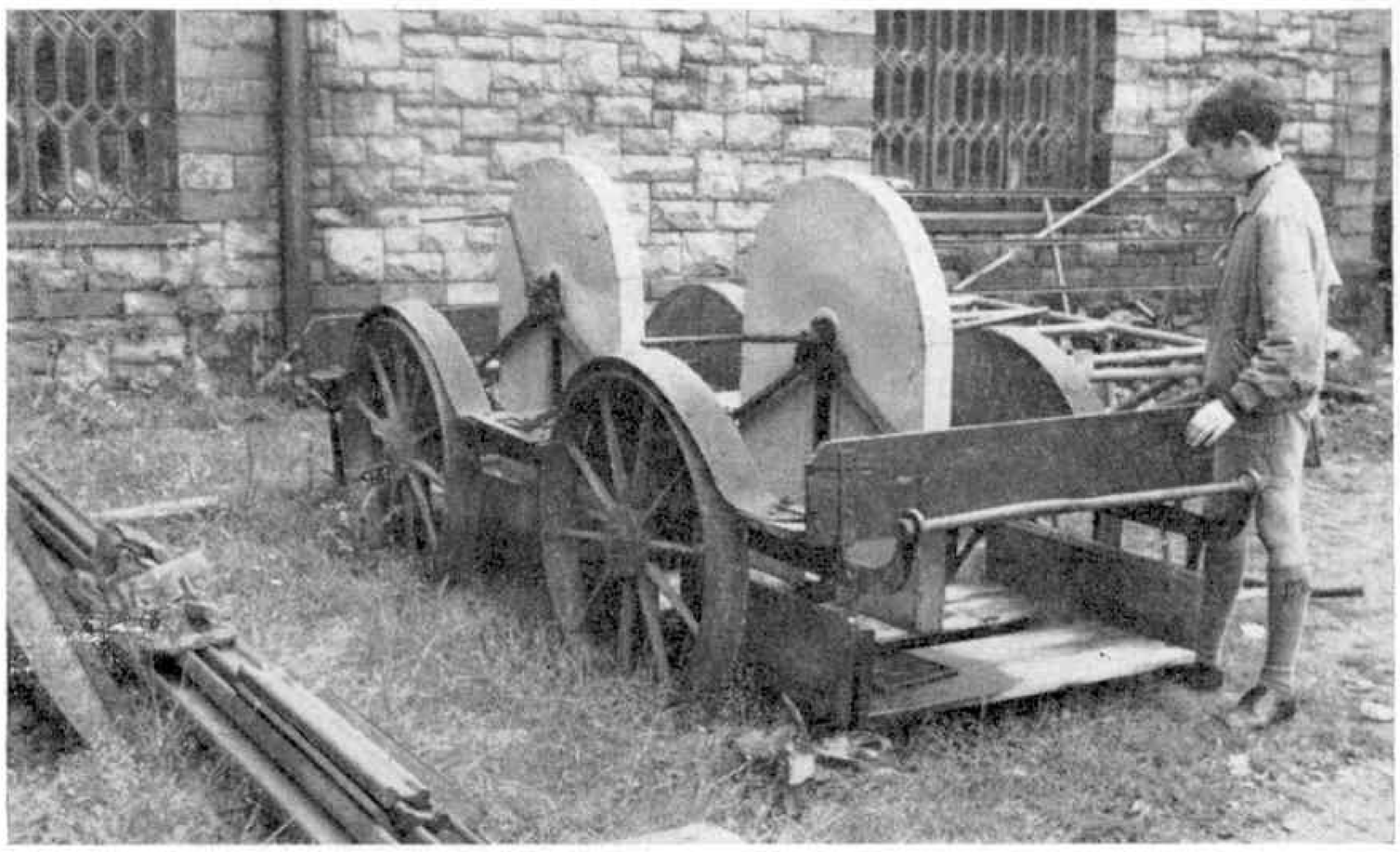

Christmas Greetings

THIS month's issue completes another twelve months' circle in the long history of the *Meccano Magazine*. For over 40 years the Magazine has been published and throughout that period it has held a very warm spot in the hearts of its readers. This I know well from correspondence, for although the majority of *M.M.* readers are of the modern generation, we still have many faithful readers who have followed the *M.M.'s* progress right through the years. Their letters are often nostalgic—I know what their feelings are—I was a Meccano boy myself years ago. But while it is very proper that they should treasure memories of the past, and while I find pleasure in reading about them, as far as the *M.M.* is concerned our faces must always be forward looking. There is no progress in looking back over one's shoulder, although I am the first to agree that it is often an enjoyable pastime.

It is my very pleasant task to send to those old readers, and to all who scan the *M.M.'s* pages every month, my warmest greetings for a happy time this Christmas and for a pleasant and relaxing holiday. And, in saying this, may I add my deep personal thanks, and those of the *M.M.* staff, to all who have sent us greetings in one form and another from so many parts of the world.

Turning now to the rather curious picture which appears over these notes, I felt many railway enthusiasts among our readers would like to see it. It comes from Dinorwic Quarries, at Llanberis, North Wales where the ancient 4-foot gauge Padarn Railway is now being dismantled. There is a 2-foot gauge line at the quarry, but this will soon be managed by diesels. There remains the Museum, and this is where our illustration comes in for it shows one of the early velocipedes, or platelayers' cars, which are preserved there. These vehicles were used by the men for travelling to and from their work and the one illustrated is of the hand-propelled variety. The other velocipede preserved there was treadle-operated. It is said that these machines could be dangerous, especially if the men using them tried to "break speed records". **THE EDITOR**

Next Month: A PILOT'S LIFE ON THE TYNE

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OUR FRONT COVER

Winter time in Norway means that the railways must have ready their snow fighting equipment. In addition to having huge rotary snowploughs at work, each individual locomotive is equipped with a small plough fitted on to its buffer beam. Our cover picture this month, by J. Allan Cash, depicts the scene at Finse Station on a winter day, two locomotives with snowploughs being visible. This station is situated on the line between Bergen and Oslo and is the highest station in Norway. It is an alighting place for winter sportsmen, and snow remains in the mountain region until July!

THE ENGLISH INVENTED CHRISTMAS PUDDING

Says Geraldine Mellor

IT is good to know that although sundry Yuletide traditions of Britain are derived from the old beliefs and usages created in foreign lands, the indispensable and characteristic family habit of enjoying a succulent plum pudding at dinner on Christmas Day is wholly an English invention.

This special culinary attraction started around the year 1100 simply as a boiled wheaten food, served with the initial course of the Christmas banquet. Then some eggs were added, and later still a handful of dried plums (prunes), currants and raisins, which mixture was styled "plum porridge" or "plum pottage".

The next stage in the evolution of our Christmas sweet consisted of a tasty-sounding dish, suitably nominated "plum broth", made by boiling mutton or beef with broth, thickened with brown bread; when half boiled, currants, raisins, prunes, ginger, mace and cloves were united in the mixture; and when it had all been meticulously boiled, the dish was taken to the festive table in a tureen, piping hot and in a semi-liquid condition, to be savoured with the finest meats.

Another description of this food was "hackin", owing to the fact that the ingredients were hacked or chopped prior to being commingled.

* * * *

By the year 1670 lumps of wholesome English suet had been added, so that five years later Rabisha, a seventeenth-century culinary expert, in his book *The Whole Body of Cookery Dissected*, gave directions for a pudding to be boiled in a basin, which shows some similarity to our modern Christmas pudding. Oddly enough, he failed to include it in his winter menus, but "a dish of delectable stewed broth, if at Christmas", is remarked upon.

Again, a copy of *The Tatler* published at the time of Joseph Addison, the English essayist, poet and man of letters, who lived from 1672 to 1719, informs us that, "No man of the most rigid virtue gives offence by an excess in plum-pudding, because they are the first parts of the dinner".

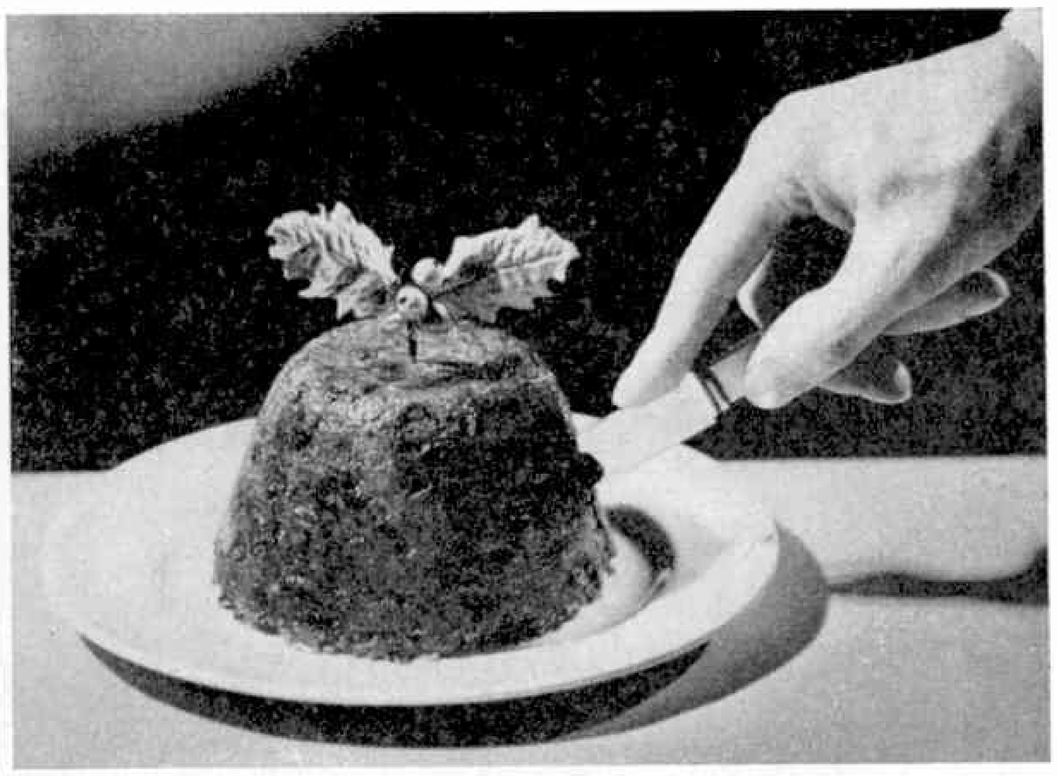
On the other hand, as late as 1791, Mrs. Frazer, a Scots cookery teacher, included plum pottage among the soups in her cookery book published in that year, while 41 years earlier that well-known eighteenth century publication, *Poor Robin's Almanac* had recommended plum broth among the items of Yuletide fare.

Following centuries of development in food, Christmas pudding became sweetened and stiffened into the seasonable eatable that we know today, and the last recorded appearance of an ancestor of our present pudding of which we have any

"Taking up" the Christmas Pudding, 1848. This reproduction of an illustration by Kenny Meadows appears by courtesy of the "Radio Times" Hulton Picture Library.

For the four-year-old at the top of the page the chance to create a big stir came when she offered a helping hand at a day nursery where Christmas preparations were in progress.

Left: Young patients at a hospital near London stir the Christmas pudding under the friendly eye of a Sister.



Does this make your mouth water? Someone is about to test the truth of the old saying, "The proof of the pudding is in the eating".

account dates back to 1801, when the English antiquary and clergyman, John Brand (1744–1806) recorded that he relished "a tureenful of luscious plum porridge" while dining at the table of the Royal Chaplain.

Reigning supreme, plum pudding, by the mid-nineteenth century (which was commonly called the "pudding age"), had grown into an integral part of the English Yuletide dinner, and was eaten after, instead of with, the meat course. It was wrapped up in a cloth, boiled on the morning of December 25 and served with much formal observance, frequently soaked with brandy and set aflame while being conveyed into the dining room, crowned with a holly sprig. Thus it is so graphically described by that great contemporary novelist Charles Dickens in his well-loved book *A Christmas Carol.*

For instance, Dickens tells us that Bob Cratchit's plum pudding is "like a cannon ball, so hard and round, blazing with ignited brandy and a piece of holly stuck on top."

This blue and yellow brandy flame from the kindled pudding is a symbolic light in honour of Jesus who was born as a Light to illuminate every nation, as St. Luke recounts, while the sharp-pointed holly leaves and blood-red drupes remind us that Christ was born to wear a crown of thorns.

It was in the time of Charles II that the fashion of stirring the plum pudding with a wooden spoon was inaugurated. This was to respect the memory of the wooden crib in which Our Lord was born, and it was ruled that the stirring must always be from east to west, in commemoration of the visit to Bethlehem by the Three Wise Men.

* * * *

Secreting lucky charms in our English-invented festive food gained the height of favour in the last years of the nineteenth century, and they are, of course, supposed to tell the future for the fortunate finder when the pudding is eaten. A silver coin (formerly a threepenny bit, but now a sixpence), a ring, a thimble and a button are stirred in, the coin to bring luck to the one who discovers it, the ring indicating marriage, the thimble bringing a life of single bliss for a female, and the button meaning the same for a male.

According to another ancient belief, "by all means you must have a plum-pudding grown rich and black and solid" should you desire to avoid losing a friend between this Christmas and next!

Some strange Christmas puddings have been contrived at different times, as at Yuletide 1899, when the town of Ladysmith was encircled by enemy forces during the Boer War. Early on December 25, two 100 lb. shells came to rest within the beleaguered town—but failed to explode. The besieged troops carefully examined the shells, and to their amazement found that they were merely harmless hollow wooden containers with seasonable greetings painted on the outside. Within was every ingredient they required to make two huge Christmas puddings—a gesture of Christmas goodwill from the Boers.

A charming annual plum pudding custom is observed each December when London's Lord Mayor is presented with a 160 lb. pudding, from the Australian Dried Fruit Growers, which not only contains 120,000 Australian currants but also one ounce of pure gold. This colossal sweet requires four chefs to carry it, and the traditional ceremony of setting it alight is performed by the Lord Mayor, after which the pudding is given to 1,000 old people in the city.

Nowadays, ready-cooked plum puddings are developing into dollar-earners of increasing importance, for they are sent to Canada, the United States of America and other areas of the English-speaking world. Thousands are sold to caterers and members of the public in Britain, too, and the business has become so big that it necessitates large scale organisation from the huge factories where the puddings are manufactured and where production plans are discussed as early as April.

Lancashire boasts one of the biggest Christmas pudding factories, where the 800 employees, commencing early in September and working four shifts a day, have produced approximately 25,000 lb. of Christmas puddings every twenty-four hours this year.

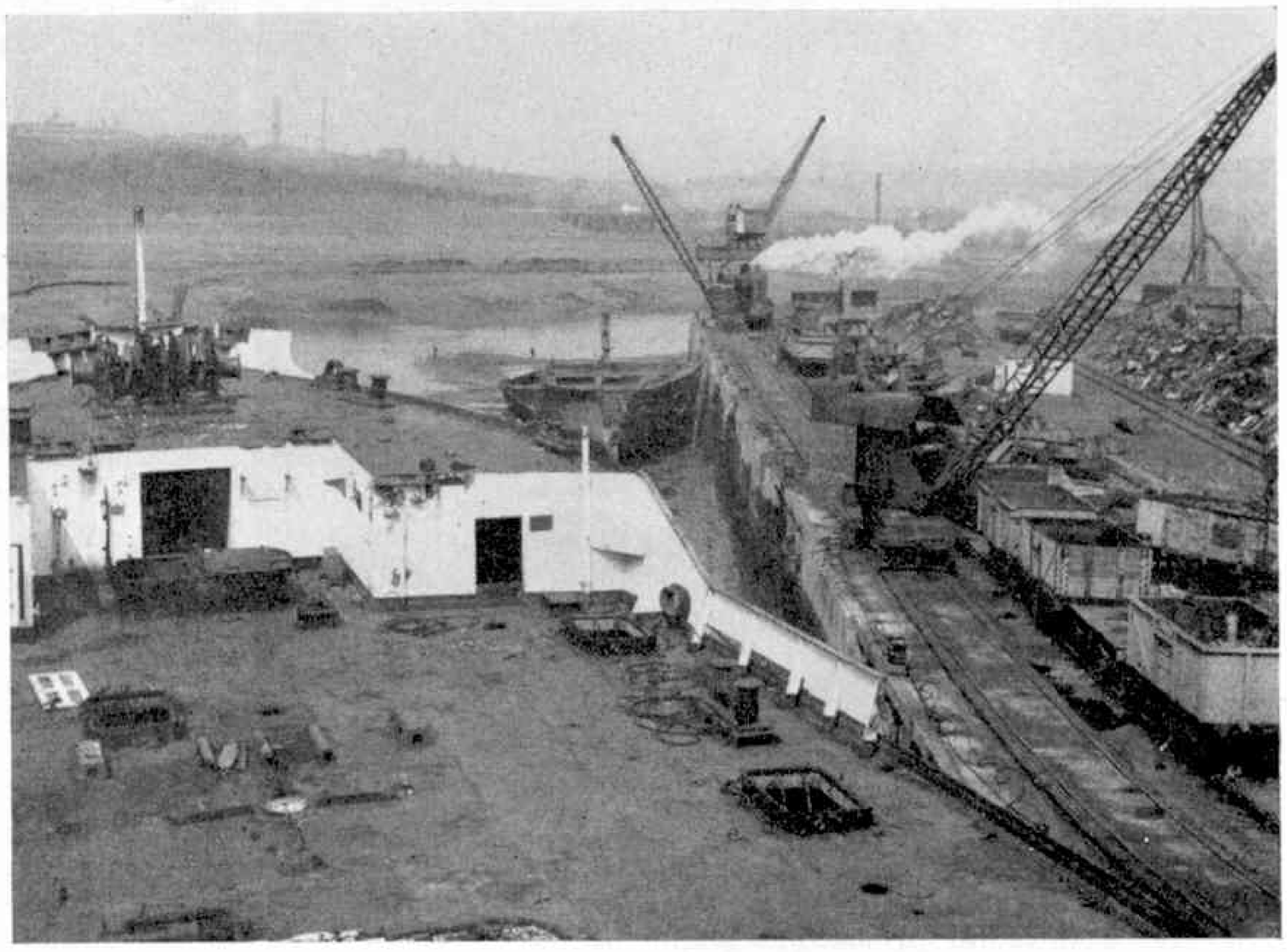
Before manufacture, every ingredient entering the factory is laboratory tested. A special machine, working on the centrifugal system, is used for removing stones from the fruit. A glass-fronted model bakery in the laboratory enables each cooking operation to be observed minute by minute, and all puddings make a three-quarter mile journey from the plant where the ingredients are mixed to the packing room where the cheery, transparent wrappings are attached.

"WEIGHTS AND MEASURES"

An addition to the excellent series of Methuen's Outlines is *Weights and Measures* by Philip Rush and John O'Keefe (Methuen, 15/–). Taking the earliest days of the beam scale as a starting point this book tackles most successfully a rather unusual field. One learns how that peculiar word "avoirdupois" came to be connected with weighing; from what source the word "ounce" is derived, etc. The monotonous tables of weights and measures take on a new look as the story unfolds. A portion of the book is devoted to measures of length and capacity, and there is a separate chapter on the Metric System. There are many illustrations.

When A Ship Reaches The End of the Road . . .

THE BREAKERS' YARD



A general view of a shipbreaking yard. The hulk in the background is having its holds removed while it is high and dry on the river bed.

"WE call it 'chunking'", said the shipbreaker, pointing to the mass of steel the crane was swinging inshore. "In a few weeks more we shall have completed dismantling this tanker and will have salvaged something like 4,000 tons of metal."

Shipbreaking as an industry—as opposed to the deliberate wrecking of unsuspecting merchantmen by some of our nefarious ancestors, who plundered the stricken ships when they ran aground—may be said to have begun in Britain in 1894. In that year Mr. Thomas W. Ward bought his first ship for dismantling at Barrow-in-Furness. Now, the company he founded, and which bears his name, is the largest shipbreaking concern in Britain and probably in the world. Six other yards were established at Preston in 1894, Briton Ferry, Glamorgan, in 1906, Grays, Essex, in 1919, Milford Haven in 1920 and Inverkeithing, on the Firth of Forth, in 1922.

Famous names

To these yards have come more than 2,000 ships, great and small, for dismantling; the famous battleships *Dreadnought* (17,900 tons), *Royal Sovereign* (29,150 tons), *Nelson* (33,050 tons), *Revenge* (29,150 tons), *Rodney* (33,900 tons), the aircraft carriers *Argus*, *Formidable* and *Implacable;* battle cruisers, destroyers, submarines and a host of smaller craft. Ships with famous names in Britain's merchant fleets have also been dismantled by this company. The Canadian Pacific liner *Empress of Australia*—22,000 tons and 520 feet long—was dismantled at Inverkeithing in 1952. The Union Castle liner *Llandovery Castle*, also in 1952, the Cunard White Star liners *Homeric* (34,000 tons), *Olympic* (46,400 tons) and *Cedric* (21,000 tons) were also broken up at Inverkeithing.

The *Majestic*, 915 feet long and with a gross tonnage of 56,559 tons —the biggest vessel in the world

By L. Bruce Mayne

until the *Normandie* was built—was bought by Ward's in 1938 but was acquired by the Admiralty soon afterwards for use as a training ship. She was renamed *Caledonia* but in 1939, just after the outbreak of World War II, caught fire and sank in the Firth of Forth. Ward's were called in and she was pumped dry and towed to Inverkeithing where she was eventually broken up, but not before she had broken below the water line. Work on her was completed in 1941.

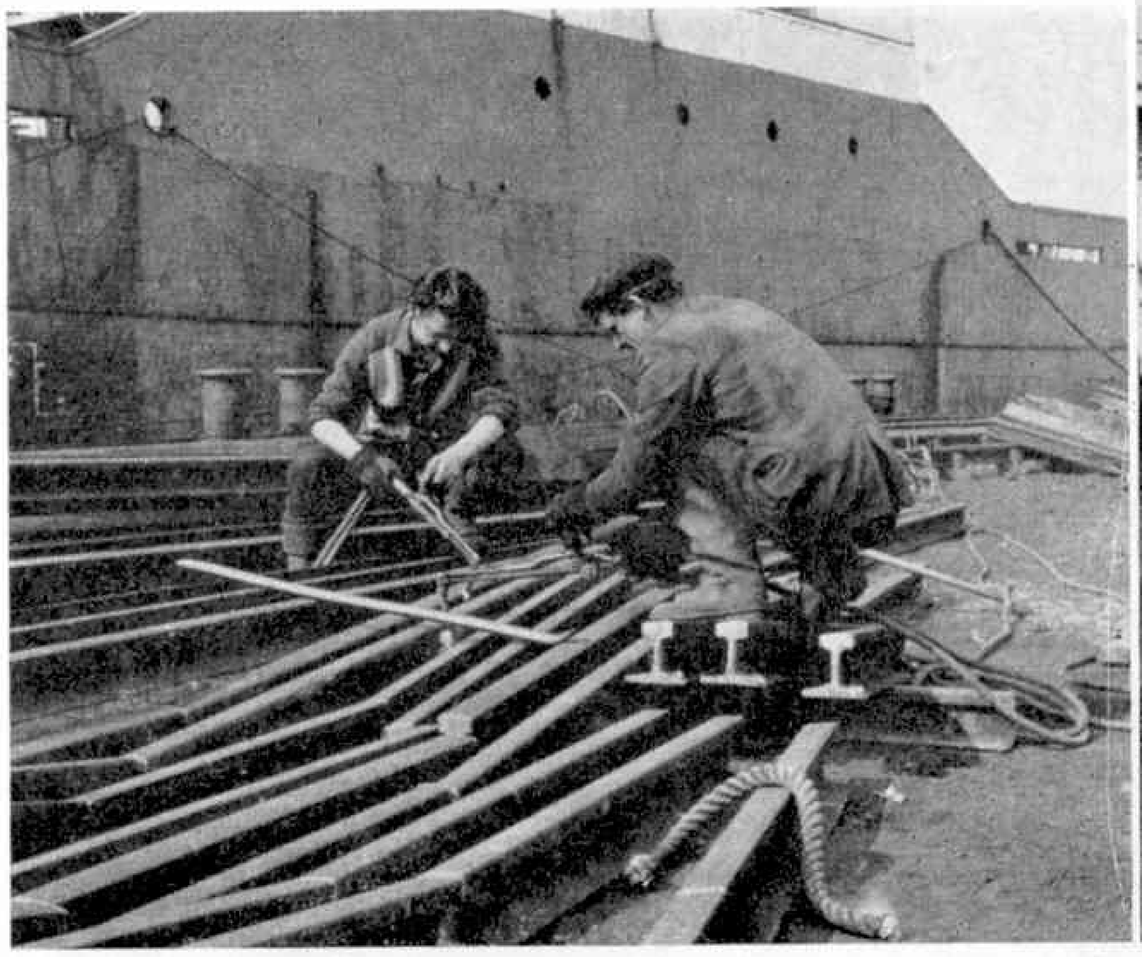
But these famous ships are only a few of the merchantmen of all classes—tramps, trawlers, tankers, cargo liners, colliers—whose names will not be so well remembered except by the staffs of the breakers' yards up and down the country.

In the early days every plate was separated by hand, each rivet being removed individually. Now the hammer has given way to the oxy-acetylene cutter and the ships are sliced through like so many loaves of bread.

The ideal site for dismantling ships would have slipways and dry docks but in such a competitive industry as this the "luxuries" have to be dispensed with. However, a good quay wall and a sufficient rise and fall of tide, to enable the ship to be towed to her berth and yet be dry at low water when the time comes for the bottom to be cut and removed, is essential.

At Giant's Grave in Briton Ferry, which held its unusual name long before the first ship—the *Colossus*—was broken up here and refers to a legendary giant of long ago, Thomas W. Ward have a site which is smaller than some but more or less typical of most, being able to handle ships up to 12,000 tons displacement.

When a ship—most of them handled at Briton Ferry these days are 8,000 ton tankers—is towed up the River Neath, it is moored at a jetty where workmen strip the furniture and interior fittings which are sold to the public. When this has been



(Left): Ashore, burners cut steel to scrap size. (Right): This oil tanker has had its furniture removed and is ready for the shipbreaking gang.

done the ship is handed over to a gang of skilled breakers.

In each gang are twelve burners, six burner-labourers and two cranes. The burners disperse themselves over the ship —at the bow, on the bridge, in the engine room and at the stern. First the funnels and masts are dropped and then the superstructure, deck and the shell are "chunked" into pieces about 15 feet by 10 feet weighing between two and four tons. The "chunks" are removed by crane to the shore where other burners cut the pieces to scrap size, which is about 5 feet by 2 feet. The steel scrap is loaded into railway wagons and is despatched to steelworks nearby. The non-ferrous metals are sent to the "brass" stores where the copper, lead, gunmetal and, of course, brass is sorted, graded, bagged and despatched to merchants all over the country.

Removed by Crane

As the superstructure and the decks are being removed, some of the burners start work in the engine room. Here there are always difficulties, one being the large amount of cast iron to be found that cannot be burned with an oxy-acetylene torch. The castings are removed by crane —some pieces may weigh eight tons—to the "bull-ring" where they are dumped and smashed by a heavy iron ball or "tup", which is dropped from a considerable height by a crane.

Such things as pumps and lighting sets are removed in one piece for re-sale as units. These dismantling jobs are tricky, too, and so is the cutting and removal of the massive cranks and shafts which are up to two feet in diameter and which are made of such tough steel that high pressure oxy-acetylene flames have to be used.

All the while the "loaf" is being cut lower. The propeller is removed and the rudder is cut into three pieces because of its weight. The nearer the bottom the burners get, the greater the skill required to prevent the hulk being flooded. As the tide begins to fall the gang starts work on a hold which is separated from the next by a bulkhead. Within four hours the hulk is high and dry and the metal from the bottom can be removed. On the following day the next hold is removed in the same way. In twelve to fourteen weeks the last metal has been lifted from the river bed.

Need for knowledge

At first sight it might appear that no particular skill is necessary to break up a ship. Nothing could be further from the truth. Considerable engineering skill and technical knowledge are required if the equilibrium of a ship is not to be upset and the metal and other items other than scrap are to be salvaged efficiently.

Each type of ship presents its own particular problems to the breakers but the most difficult is undoubtedly the refrigerated ship which has so much charcoal, cork or silicated cotton insulation. All this material has to be removed and bagged, which results in heavy labour costs.

The smaller classes of warships—destroyers, frigates and minesweepers—are comparatively easy to dismantle. They can be opened up almost from end to end and the interior fittings can be lifted ashore. The ship is then cut up section by section in exactly the same way as tramp steamers or oil tankers.

Heavier warships are more difficult. The first things to be removed are the guns, the deck and the hull armour. In bygone days when the armour was made of thick iron sheets or steel plates welded to iron decking, this was an extremely difficult task. Armour plate ripping machines were used to cut iron plates but the welded steel on iron had to be separated by hand or by breaking with a heavy "tup". Nowadays, armour plate is nickel steel or some other alloy, and is cut into suitable sizes comparatively easily with oxy-acetylene burners.

Fuel oil sludge is a problem in all ships. Not only is it inconvenient to remove but it also constitutes a real danger. A spark from a burner's torch can easily ignite this coagulated, glutinous mass, causing a fire of great intensity.

At a shipbreakers' yard there is romance and tragedy. Proud ships which have been elegant liners or veteran warriors lie tilted on a muddy river bed like stranded whales, ready to supply the hungry maws of steel furnaces with up to half a million tons of scrap each year.

Romance and Tragedy

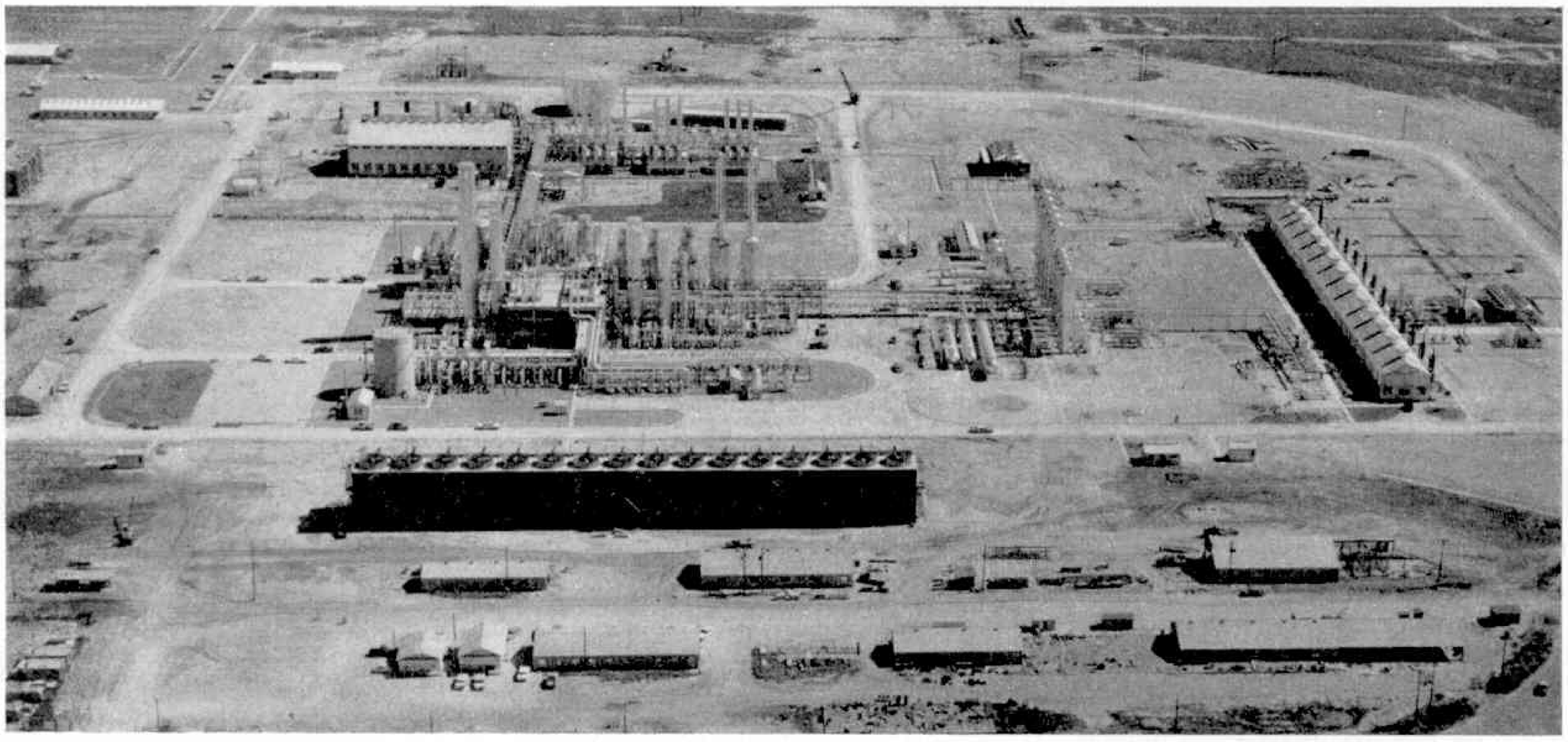
Romance and tragedy there may be, but there is certainly no glamour. Workmen in greasy dungarees and burners in protective face-masks with torches roaring, not to mention the prospective buyers, swarm over the vessels which have served their time and which, for one reason or another, are no longer considered fit to sail the seas of the world.

A BOOK ABOUT INVENTIONS

A wonderful gift for a boy at Christmas is the Eagle Book of *How It Works* (Longacre Press, 15/–). Its pages include descriptions of such inventions of the modern age as the fuel cell, supersonic aircraft, the electronic highway, diesel locomotives, atomic ships, space rockets, robot factories and television. The text is well illustrated with first-class pictures and explanatory diagrams.

Other Longacre Press books which will thrill youngsters at Christmas are three in the Swift picture book series (7s. 6d. each) —*The Wild West*, *Trains of the World* and *Transport Oddities*. They are chiefly pictorial in character.

Synthetic Petrol–Spirit Of The Future?



PRODUCING MOTOR FUEL FROM NATURAL GAS

By
LESLIE E. WELLS

FOR years, geologists have been warning that petroleum reserves were in danger of being exhausted. The answer to the problem has now been found. Scientific wizardry is producing motor fuel in quantity from natural gas. Since the end of World War II, activity in the development of processes for the production of synthetic petrol from natural gas has been centred in the United States. Today, it is one of the most rapidly growing industries, accounting for many millions of gallons yearly. At the moment, most of this production goes to petrochemical plants and refineries.

One of the most difficult problems has been to increase the octane rating of petrol obtained from natural gas to meet the needs of the modern motor car engine. This obstacle has now been effectively overcome and in the near future motorists will have a much cheaper, and perhaps more efficient fuel, than they are receiving at present from petroleum.

In 1951, the first full-scale synthetic petrol producing plant was built at Brownsville, Texas. This began to produce commercial quantities of the fuel to sell competitively with that derived from petroleum. Today, scattered all over America are close on 600 such plants—and the number is steadily growing.

Developing petrol from natural gas has proved one of the costliest undertakings in the history of private enterprise. It is estimated that the cost of development work in the U.S.A. already exceeds 12,000,000 dollars, and this does not include the large sum needed to build the first commercial plant.

Natural gas is made up of four gases: methane, ethane, propane and butane. Methane is the most plentiful, representing about 90 per cent. of all natural gas. Burned in an atmosphere of pure oxygen, methane produces the two gases carbon monoxide and hydrogen. These are the building blocks for synthetic petrol.

Carbon monoxide and hydrogen are converted into petrol by a process called the Hydrocol. This was developed after many years of costly research jointly sponsored by several large oil companies.

The aerial view at the top of the page shows the size of the King Ranch Gas Plant, near Kingsville, Texas. This mammoth installation cost 68,000,000 dollars. At the far right is the compressor building; the dark structure in the foreground is the water cooling tower; at upper left is the electricity generating plant.

Pre-war plants

In Germany there were a number of synthetic plants even before the war. These made petrol by the Fisher–Tropsch process of treating ordinary cooking gas manufactured from coal.

There is some doubt as to when and where the liquid called "natural gasoline" was first discovered. America's first natural gas wells were drilled in New York and Pennsylvania in the early part of the nineteenth century. In transporting natural gas through small pipelines, it is likely that the operators had difficulty with a liquid which condensed in the lines. In 1897, at Coraopolis, U.S.A., a J. W. Mettler had considerable trouble with this liquid; his small fuel line filled with what we now know to be natural gasoline.

About the same time, the oil producers

Sutton Brothers and Edmonds were pumping natural gas produced from oil wells through lines laid across a stream near Sisterville, U.S.A. Appreciable quantities of gasoline formed in the lines. This liquid, regarded as having no more than a nuisance value, was collected from time to time and burned.

Originally called "drip" gasoline, it was later known as "casinghead" gasoline because it condensed from the gas coming off the casinghead of the well. Today, it is more aptly called "natural" gasoline, being derived from natural gas.

It is generally agreed that commercial operations in the natural-gasoline industry began in 1903. Sutton Brothers and Edmonds initiated the production of natural gasoline in that year and sold it in barrels and were joined, almost at once, by William Franzenmayer, who built a plant at Tidioute, Philadelphia, U.S.A.

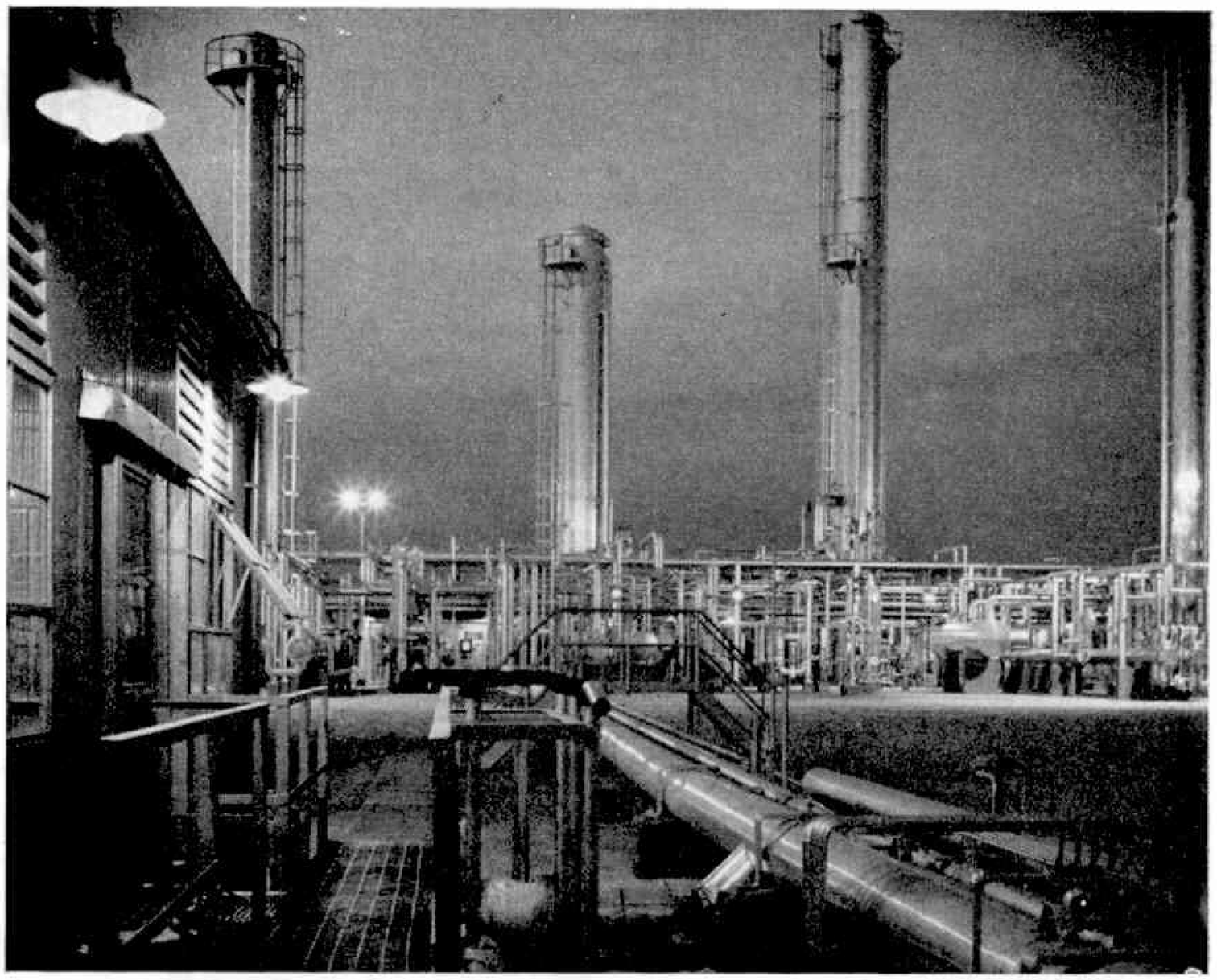
This joint undertaking brought into being the Reno Oil Company, and what was probably the first plant designed for the recovery of natural gasoline. In 1904, the plant had a total output of about 4,000,000 gallons, and it sold at about ten cents a gallon.

Link-up with cars

It may be said that the natural gasoline industry achieved maturity and general recognition in 1911. At that period 176 plants were producing something like 7,000,000 gallons.

The link-up of natural gas with the motor car goes back to the 1930's. At that time, Grainger Brown of the University of Michigan, and D. E. Buchanan travelled to meetings of refiners to demonstrate the use of natural gasoline as a motor fuel.

Studies of its use in motor fuels continued for several years; in fact, it was not until 1938 that full-scale road tests were made. These took place at Pawhuska, Oklahoma, and, in view of their success, the producers of natural gasoline prosecuted a continuous campaign to promote its use in motor fuels.



World War II opened a new chapter in the history of this type of gasoline. It brought about an accelerated increase in production and a new period of development. Indeed, so great was the call for the fuel that production nearly doubled during those years.

Peace saw the demand for natural gasoline continuing to rise, so much so that even the vast new plants created during the war could not deal with it. Production had to be appreciably increased.

The vast expansion of the use of the automobile, and particularly the spectacular increase in the last decade, has sent the demand for natural gasoline rocketing. This accounts for the King Ranch Gas Plant which, only recently completed, ranks as the largest natural gas processing plant in the United States. Situated some fourteen miles south-west of Kingsville, in the heart of the great South-West Texas ranch country, it occupies a 151-acre site.

The output of this giant concern is truly phenomenal. Processed at King Ranch are some 800 million cubic feet of gas a day, which provide about 11,500 barrels of natural gasoline.

This new gas plant is the focal point of a vast gathering system. Through 170 miles of pipelines the gas is collected from thirteen producing fields which are scattered over a wide area of South-West Texas. The total cost of the mammoth installation was 68,000,000 dollars.

Natural gasoline is more than simply another fuel; it ensures power for the motor car indefinitely, and removes the anxiety created by the fear that petroleum supplies would be exhausted within a comparatively short time.

A night scene at Sand Hills Gas Plant, situated among the sand dunes of West Texas, 40 miles south-west of Odessa in Crane County, U.S.A. The picture shows some of the shining towers of the gas-processing area. The plant is mainly concerned with the recovery of liquid hydrocarbons from natural gas.

Another picture from the King Ranch plant, showing a gas dispatcher keeping a close check, by telemetering system, on gas coming into and going out of the plant. Telephone and radio systems provide speedy communication.

WORCESTER BOY WINS CONTEST

Fifteen-year-old David Evans of 79 Belmont Street, Rainbow Hill, Worcester, was the winner of the major prize in Revell's "Spot-the-Ship" competition—a free trip to New York on the *Queen Mary*. His entry was selected from thousands submitted by boys all over the country who competed for the "Trip of a Life-Time" in this national Cunard–Revell promotion. Consolation prizes of the outstanding Revell kit of the *Queen Mary* have been sent to the 100 boys who were runners up.

GAMES, JOKES AND PUZZLES FOR YOUR PARTY

A MOVING QUESTION

LOOK at the drawing on the right, which is the plan view of a house. Only *one* item of furniture may be in any *one* room at a time and Mrs. Smith, who lives there, wants the Bookcase in Room 3, the Piano in Room 6, Wardrobe in Room 1, Cabinet in Room 5 and the Table to remain in Room 4. How many moves must you make? (Answer to this and the other puzzles are on page 510.)

* * * *

Teacher: What is moss?
Tommy: What rolling stones don't gather, sir.

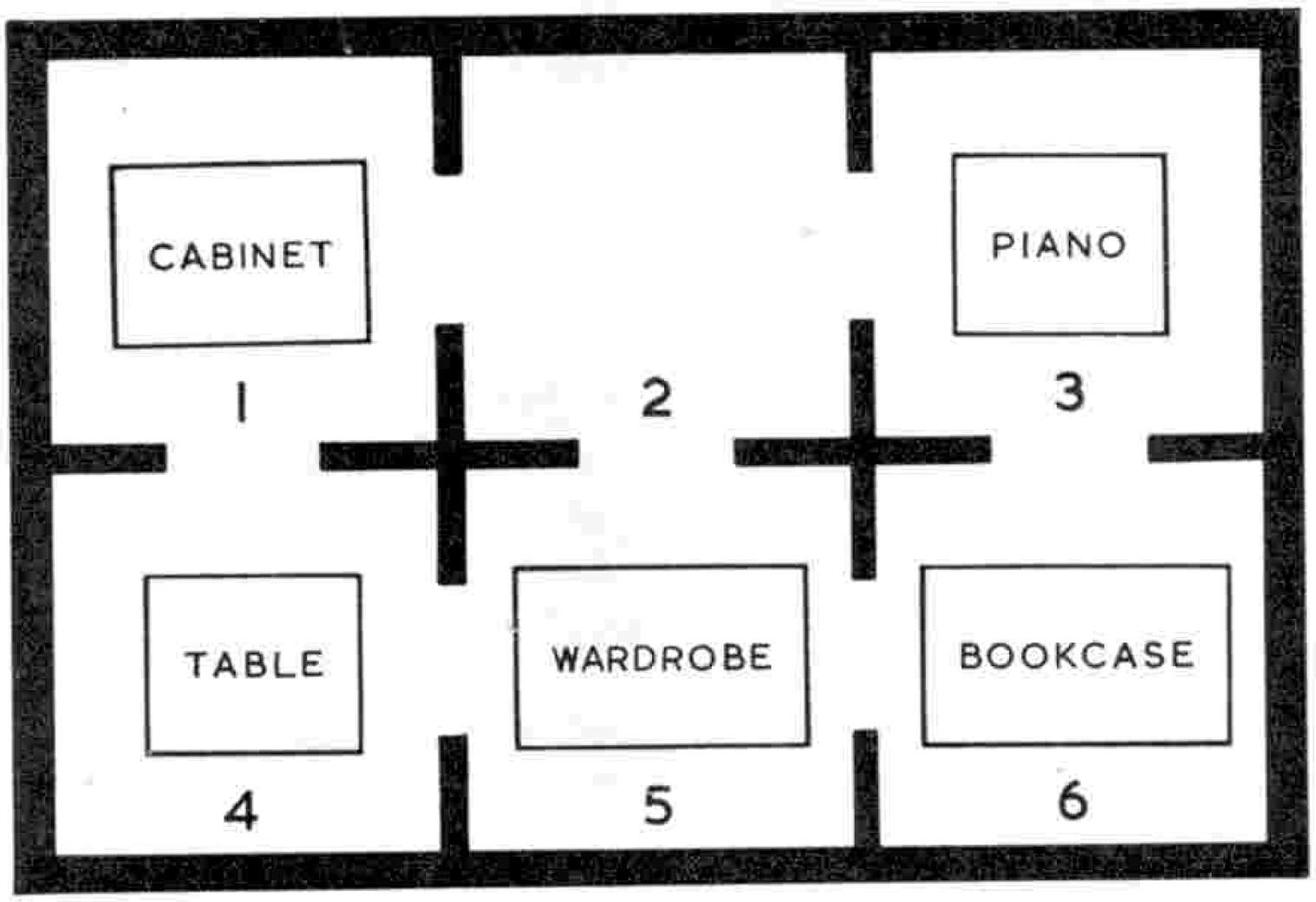
* * * *

LUCKY GUESS?

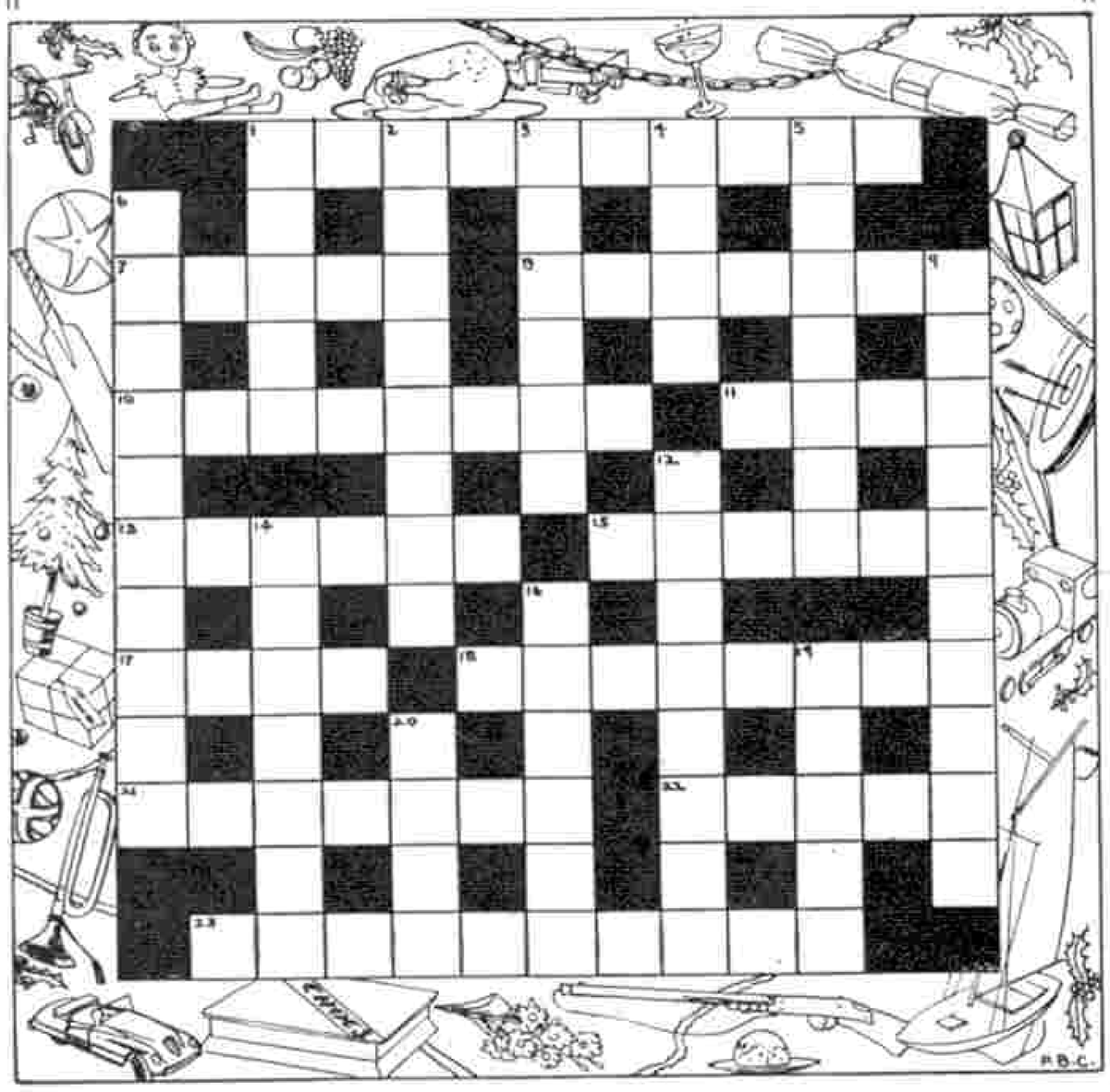
Walking into his sister's house last Christmas Day, Uncle Fred remembered that he had no present for his nephew. So he put the few half-crowns and shillings, and four odd sixpences from his pocket on the table and called the boy.

"If the shillings were half-crowns, and half the half-crowns were sixpences, there'd be sixpence more altogether," he told Tony. "There's less than a pound, I'm afraid, but you can have it all if you guess right."

Maybe it was a lucky guess, but Tony got the money. How much do you make it?



TRY THIS CROSSWORD



CLUES TO CROSSWORD

Across

1. Is this intended to bolster the size of the presents? (6, 4); 7. To put up the decorations make a fuss first; 8. Fine end to a Christmas game for the loser!; 10. It's worth hunting for at the party; 11. Ancient piece of sage dumpling; 13. Mascots show damage in both ends of the crackers; 15. The sort of weather to irritate after a success; 17. A pickle container not properly closed?; 18. Not a current movement at the festive season; 21. Used after Christmas for making a hash of things? (4, 3); 22. Rose and I will produce some basket-work; 23. Contemporary time for gifts (7, 3).

Down

1. Inclined to be flat out!; 2. Noel spoilt by several people having no company; 3. Proposes to make a present; 4. A way of greeting an eccentric fellow; 5. Take a sledge and start to turn—dexterity needed; 6. Is he engaged in an annual sack-race? (5, 5); 9. Toys Edward carries (5, 5); 12. What would give the Christmas fire a good aroma? (4, 4); 14. He just loves to play the game; 16. His wife's in the cake!; 19. Surely the Christmas cake isn't so received!; 20. Work in the toy-shop, usually.

* * * *

AUNTIE'S AGE

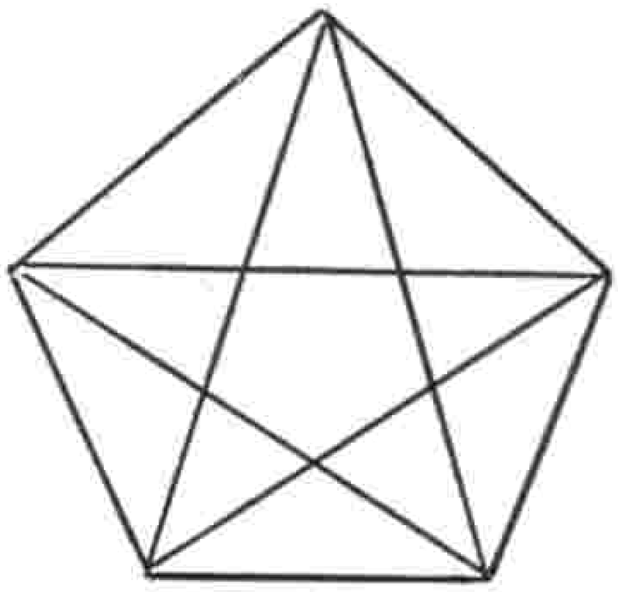
Pete closed his eyes after a sumptuous Christmas dinner. "I'll guess your age," he announced. "Think of a number."

"Not me! You know it anyway," his father chuckled. "But I'll give you something to think about." He paused a moment while the boy waited expectantly. "If you add together the two figures of Aunt Amelia's age, and then multiply by twice the difference between them, you get what her age will be in two years' time."

"Easy!" cried Pete. But he soon changed his mind.

How old was Aunt Amelia?

HOW MANY TRIANGLES?



How many triangles can you count in the illustrated figure shown above? Be careful —there are more than you may think!

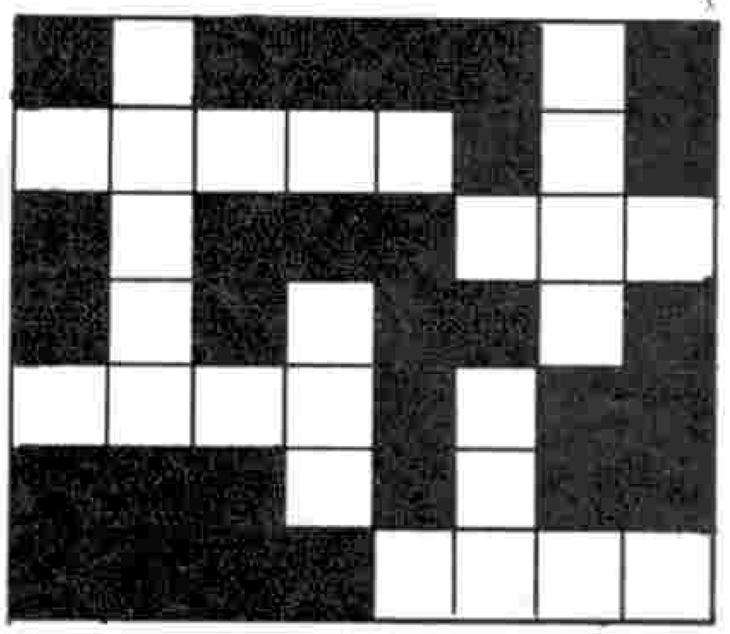
* * * *

Land owner to angler: Don't you know you are not allowed to take fish from this pond?

Angler (who has been three hours without getting a catch): I'm not taking them out—I'm feeding them.

A Word Puzzle That Is Different

In the Crossword on the right, each of the letters of the Alphabet is used once and once only. The words may be used horizontally or vertically, but their locations are not given. The clues are: What a squirrel does; A precious metal; Used by the printer; A boy's name; Look (slang); Interrogative personal pronoun; Annoy; Whim or imagination.



* * * *

Diner: Do you realise, waiter, that it is almost half an hour since I ordered that soup?

Waiter: I do, sir, but you know how slow turtles are.

HOW MANY PAIRS CAN YOU GET?

A good game for the Christmas party is PAIRS. If you want a quiet game, give the players pencils and paper and ask them to put down in a limited time—say five minutes or, perhaps ten—all the things they can think of that are always paired together—fish and chips, peaches and cream, snakes and ladders, needle and thread, etc. And, of course, you can also count names of people or of firms; for instance, Morecambe and Wise, Gilbert and Sullivan, Adam and Eve, Marks and Spencer, Barker and Dobson, etc. The player with the most pairs wins.

If you want to adopt this game for a hectic, round-the-house pursuit write both the names in, say, 40 pairs, separately on small slips of cardboard. Now, keep the *first names* of each pair by you and scatter the second names up and down the house, in corners, under tables or chairs, etc. where they can be found without the furniture having to be completely uprooted. Give each player a *first name* card and tell him or her to find its companion and bring it straight back to you, or whoever is running the game, so that the pair can be checked. If the card produced is correct give the finder another first name card so that he can match it up, then a third, and so on. When all the hidden cards have been retrieved, count up and award the prize to the player with the most complete sets.

* * * *

SPEED TEST

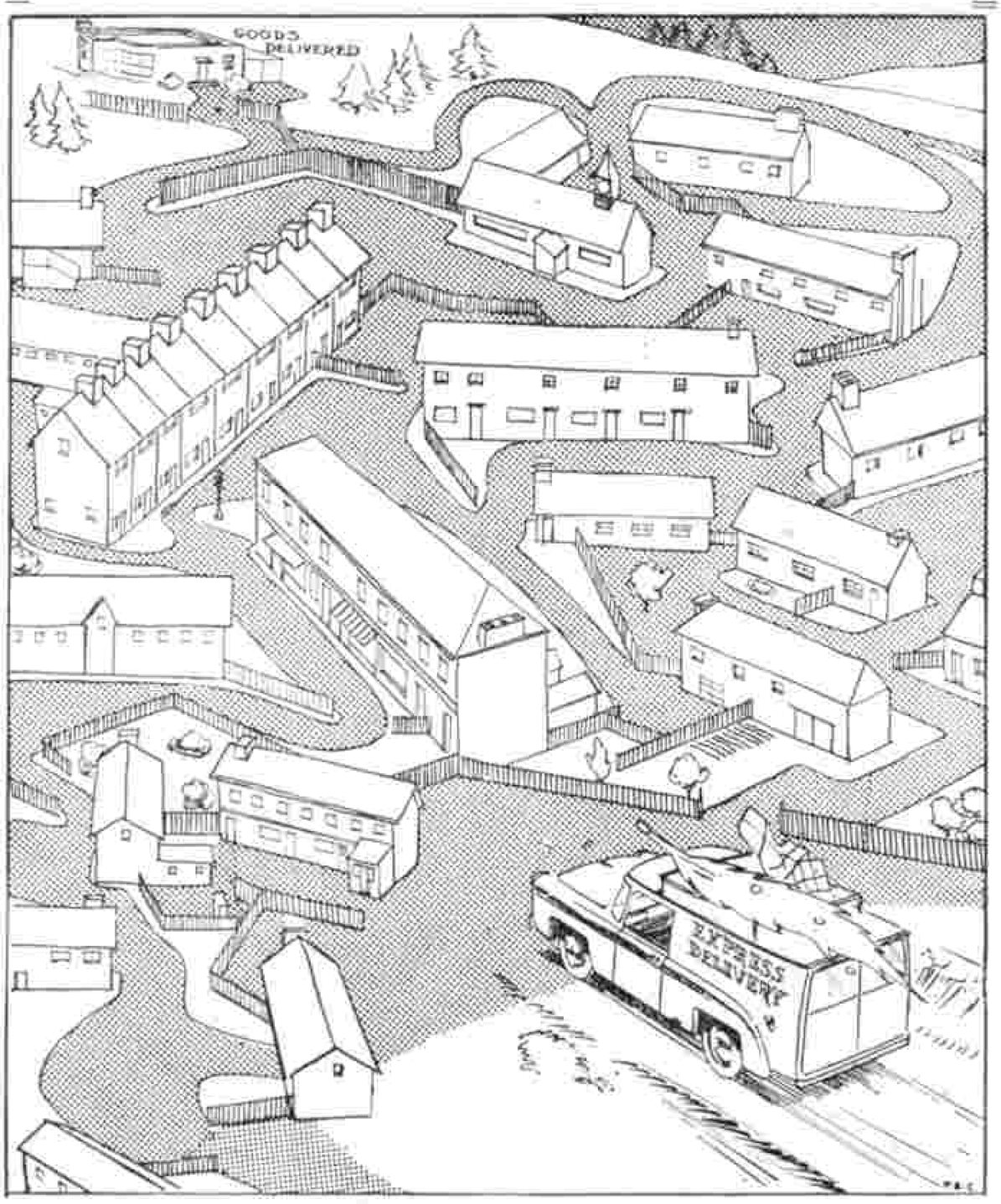
See how quickly you can answer this: Which is the greater, half a dozen times half a dozen dozen, or a dozen and a half times a dozen and a half?

* * * *

A CHANCE FOR THE ARTISTS

Team games are always an attraction at Christmas parties. Try this one: Select teams of about five people (three or four teams if possible), and get them to sit away from each other. Give each team a pencil and some sheets of paper then call one member of each team out of the room. Tell them you are going to give them the name of a show well-known on radio or television (such as Music While You Work, No Hiding Place, Emergency Ward Ten, etc.). They must go back to their respective teams and *without talking or miming*, must draw on a sheet of paper something that represents that particular show. The members of their teams must not ask questions, except to guess at the identity of the show, and the drawing must not contain any writing that will identify it. When a member of the team guesses correctly what the show is, he or she goes out of the room to be given the name of another programme or feature, then goes back and sets about drawing it. You should limit the programmes to be drawn to six or eight, with a prize for the team that comes up first with the right answers.

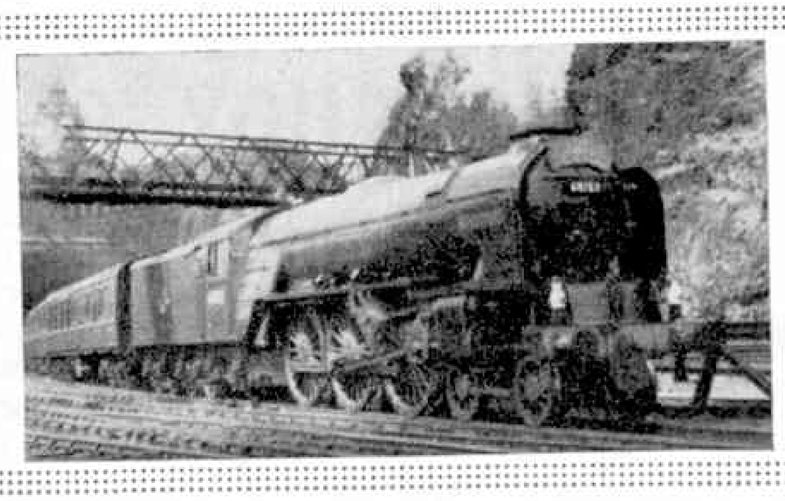
FOR JUNIOR READERS

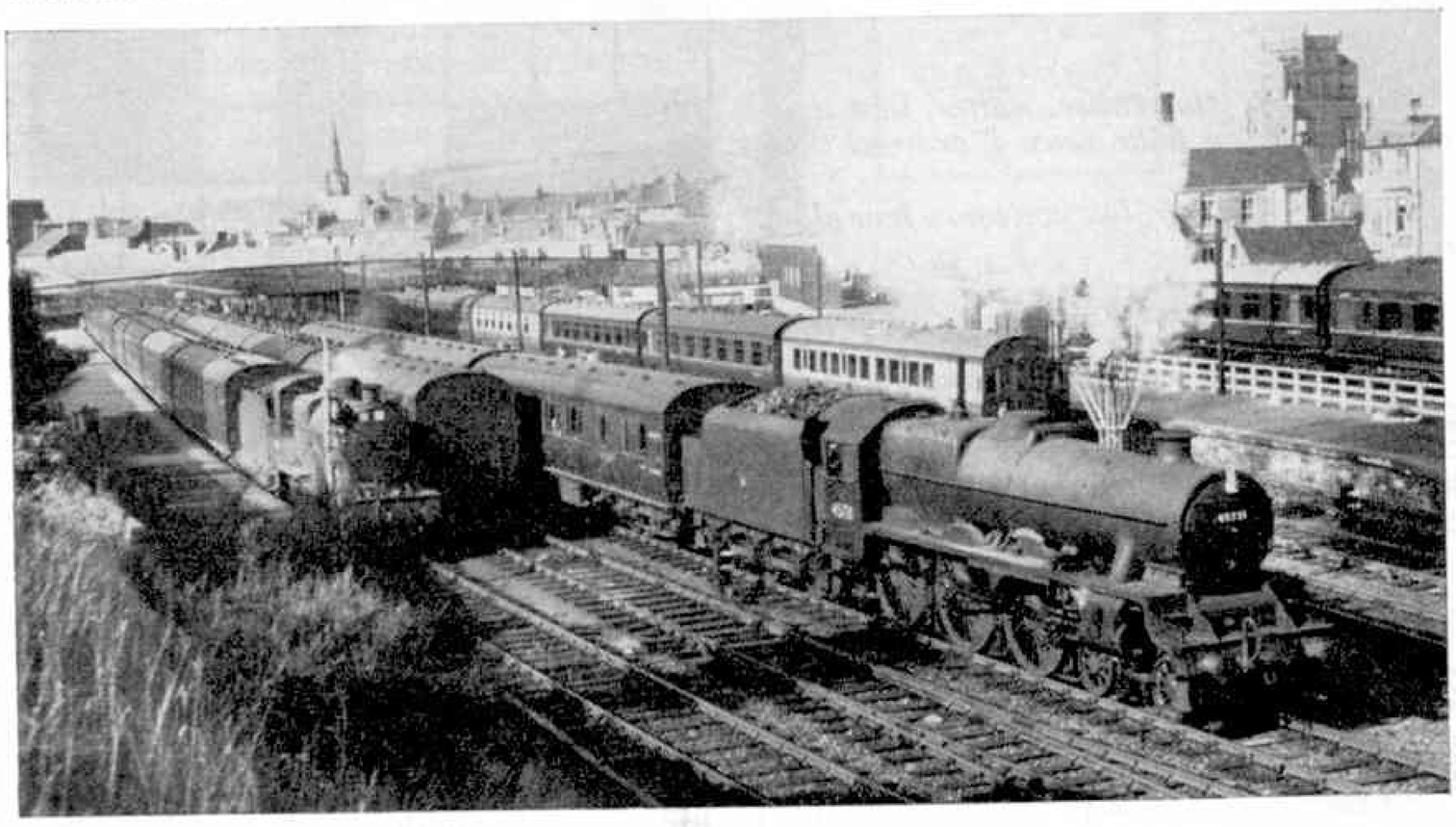


Can you deliver the mail? Our postman certainly has a problem on his hands! This suburb was obviously built before the days of town planning—so can you help him deliver his load of Christmas presents through this maze of twisting streets and blind alleys? There is only one way to get round the houses without hopping over any fences. Can you find it?

RAILWAY NOTES

Contributed by R. A. H. Weight





A SCOTTISH TRAFFIC CENTRE

THE spacious passenger station at Aberdeen was once owned and operated jointly by the Great North of Scotland and the Caledonian Railways, in a fine, busy coastal city having extensive rail-connected fishing port and docks. In the *M.M.* for October last I described my exciting daylight journey from London to Aberdeen by one of the much faster services now available. Diesel buffet-car sets, calling at principal stations only, provide a two and a half-hour Aberdeen–Inverness express service across the Highlands. Fast trains conveying fish, meat and other produce southward, run regularly from Aberdeen to London and various parts of England as part of an important series of express perishable freight services formed of specially-equipped vans.

THE ROYAL ROUTE

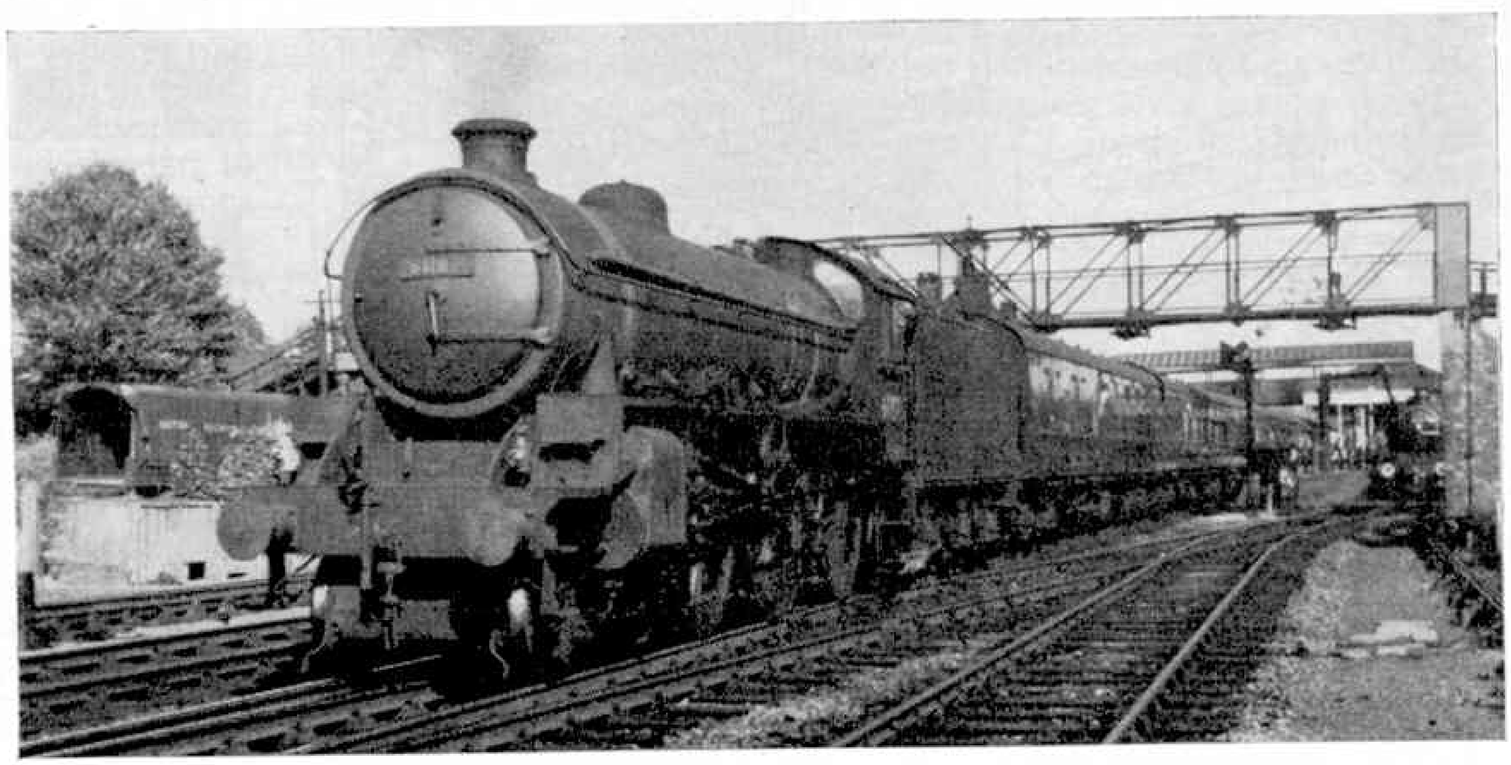
In a diesel unit with under-floor engines, a type of train familiar on local services in many parts of Britain, I enjoyed a return trip of 43 miles each way up Deeside from Aberdeen to Ballater and back. The scenery as we climbed towards the Grampians gradually became finer and wilder; views from the front and other windows of the train were most comprehensive. The start from Aberdeen was on the southbound main line, but in a short distance, before passing Ferryhill Motive Power Depot, we branched off inland on to single track. We made a number of stops at stations where passing loops were provided and the sectional "train staff", which is the driver's authority to proceed on single line, was changed.

This celebrated branch line forms the last stage of the rail route towards Balmoral Castle, of which I gained a splendid view in the course of a grand car drive over heather-clad grouse moors and through parts of the beautifully-wooded Dee Valley. The Royal Train conveying the Queen and her party from London was expected a day or two after my visit and on my arrival at Ballater, a railhead and supply centre for a wide area of the Highlands, I watched a full-dress rehearsal, with pipe band, of the Royal Guard of Honour by a detachment of the Argyll and Sutherland Highlanders.

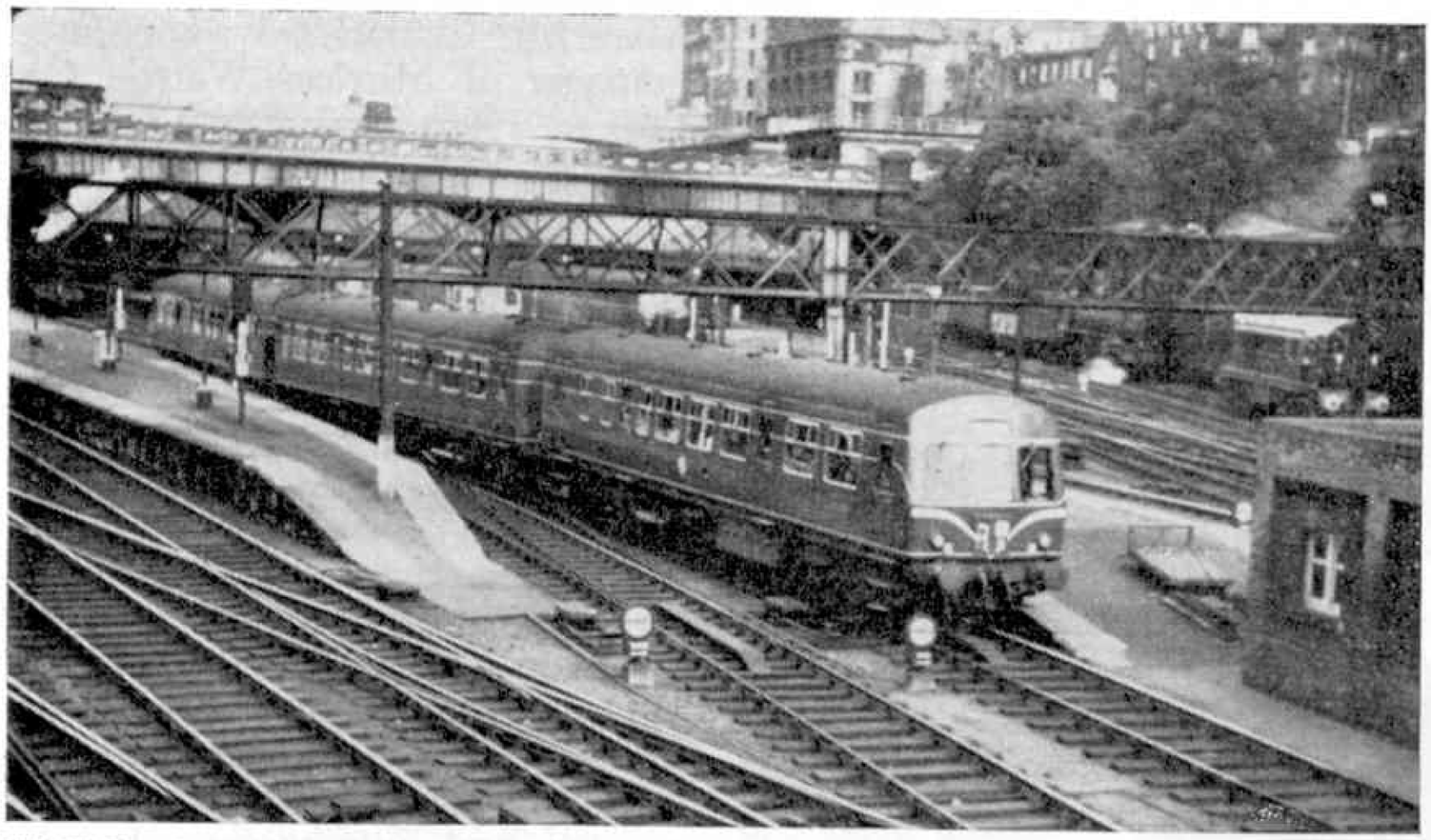
ABOARD "THE GRANITE CITY"

I found a great deal of diesel traction employed in Scotland. The steam locomotive has almost entirely disappeared from a number of well-known mountainous and scenic lines, as well as more

Our heading block shows the "Heart of Midlothian" drawing out of Edinburgh, Waverley, behind A1 4–6–2 No. 60152 "Holyrood". Photograph by C. Lawson Kerr. Below: One of the useful B1 mixed traffic 4–6–0s No. 61187 was bound from Marylebone to Nottingham when photographed at Aylesbury by R. F. Roberts.



Top: A busy Scottish scene before the introduction of diesel traction. Jubilee 4–6–0 No. 45731 "Perseverance" leaving Largs for Glasgow in 1959. Photograph by S. C. Nash.



"M.M." reader A. F. Smith photographed this three-car diesel unit leaving Edinburgh, Waverley, for Kirkcaldy.

populous or industrial routes. At the time of writing, however, the Aberdeen–Perth–Glasgow services continue to be steam operated and the newly-instituted four-stop expresses which take only three hours over that former L.M.S. route have been worked very successfully by ex-L.N.E.R. Gresley Pacifics of class A3 and A4—particularly the latter. Class 5 4–6–0s were also in use a good deal on main line trains, including holiday extras that I saw.

On a sunny evening *The Granite City* from Aberdeen at 5.15 consisted of seven modern corridor coaches, about 265 tons gross, including buffet-restaurant car. Our steed was A4 No. 60027, *Merlin*, a famous Scottish streamlined 4–6–2 which was frequently employed while stationed at Haymarket, Edinburgh, until last year, on the world-record, non-stop summer runs between Waverley and King's Cross. The Glasgow expresses have 23 miles further to go than the correspondingly scheduled best Aberdeen–Edinburgh trains, but they do enjoy longer stretches suitable for fast running, with fewer severe speed restrictions. Nevertheless, it is on average a hard route calling for powerful locomotive work, especially on such a timing.

After attaining 56 m.p.h. uphill we reached Stonehaven, sixteen miles, our first stop, within the nineteen minutes allowed. There are sharp ups-and-downs near the sea and cliffs. At Kinnaber Junction, 38 miles from Aberdeen, we diverged from the tracks used by all main southbound trains, travelling from that point inland over flatter, more pastoral country towards Perth. We covered the 41 miles from Stonehaven to Forfar, including climbs at 1 in 107–120, in less than 43 minutes at speeds varying between 55 and 76 m.p.h. The 32½ miles from Forfar to Perth constitute a short "flying stretch" booked at over 60 m.p.h., start to stop. About half-way a bad track repair slowing rather spoiled the anticipated sprint, but both before and after it *Merlin* ran steadily at around 76–78 m.p.h., under easy steam it appeared. We merged with the Highland line from Inverness at Stanley Junction, and passed the new ultra-modern marshalling yard to stop gently in Perth—where a signalling system of the latest type has been installed—about one and a quarter minutes late.

Filling up with water, loading mail and parcels, etc. took rather a long time and we were a few minutes late away, but judging by previous experience, the guard said, "*We can still be in Glasgow to time*". Back among steep hills on this northern part of the West Coast Anglo-Scottish main line, we soon attained 60 m.p.h.; then, forging up the long 1 in 100 past Gleneagles at a minimum of 51, we kept the exact time of 36 minutes on to the last stop, at Stirling. The weather had deteriorated rapidly, so the last of the rugged Highland and river scenery was largely lost to view amid rain and mist. On the wet rails *Merlin* suffered wheel-slip and some delay in getting away from Stirling, but was soon hard at it again, with uphill speeds near the mile-a-minute rate. But there was little further opportunity for high speed, owing to restrictions, then signal slowings, through the industrial area around Glenboig on a busy day. In heavy rain and gloom we descended into the smallest and least impressive of the Glasgow termini — Buchanan Street — arriving only a few minutes late.

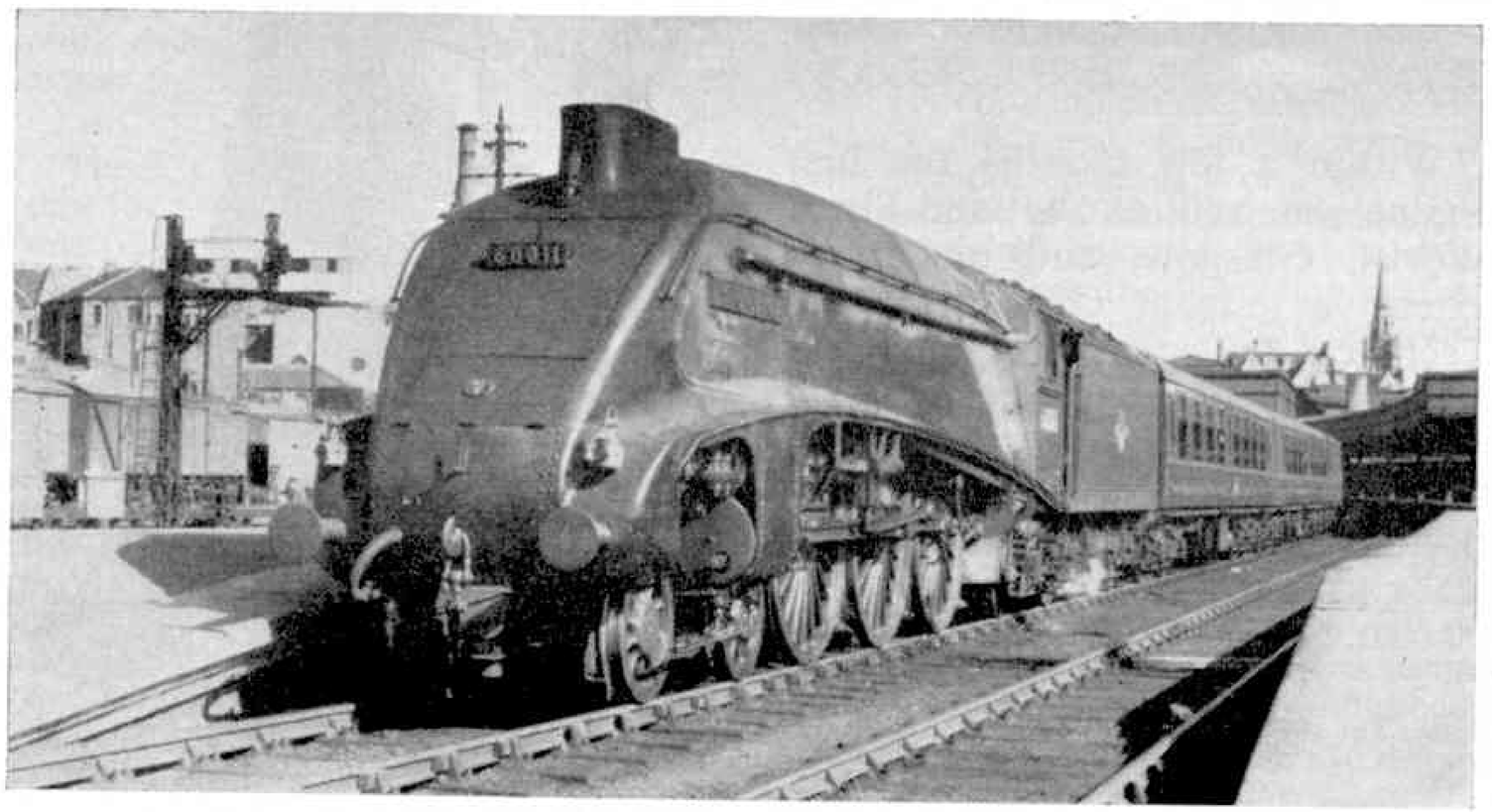
No. 60011 "Empire of India" at Aberdeen at the head of the 9.30 a.m. for Glasgow, Buchanan Street. Photograph by S. Creer.

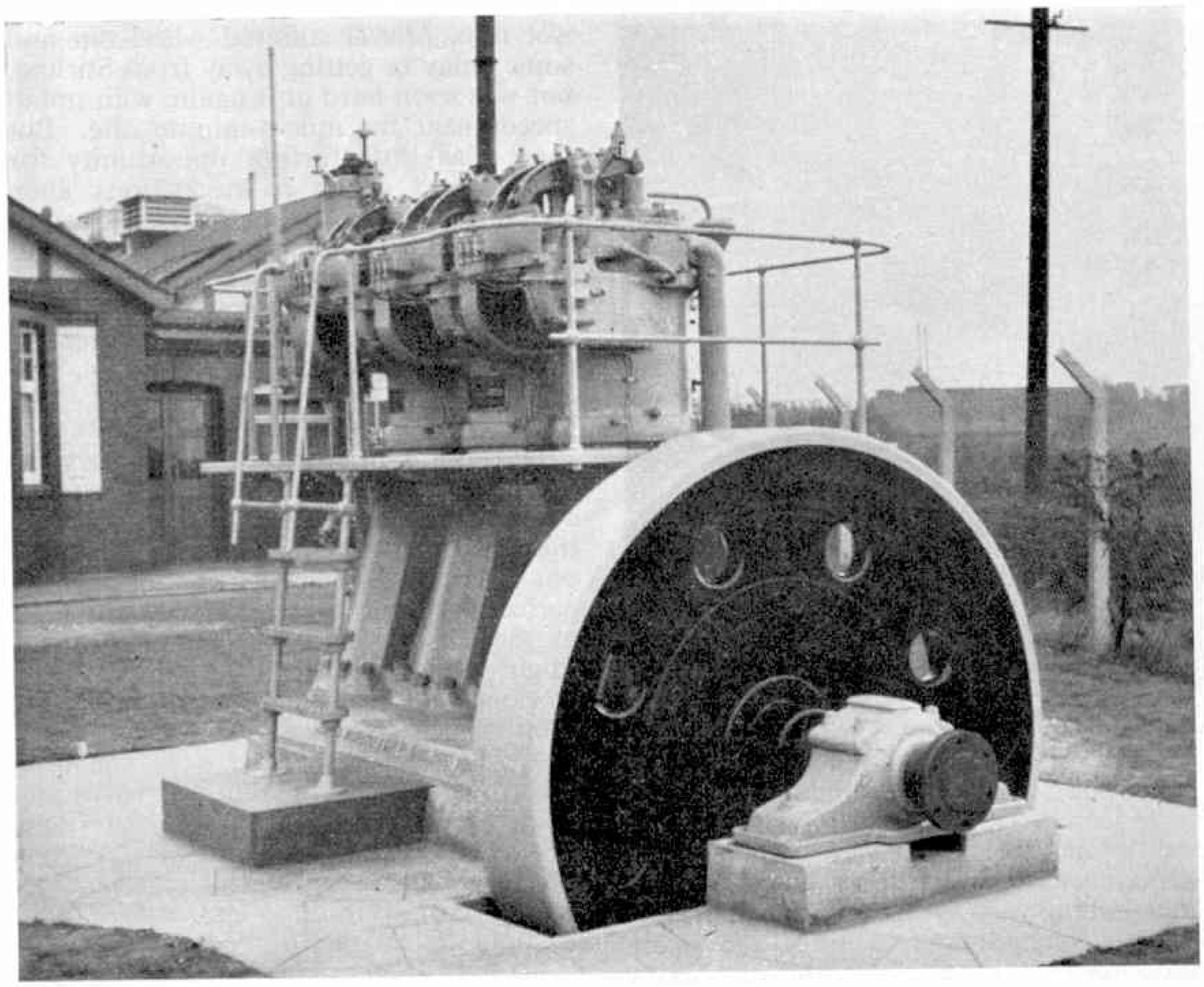
THE "BLUE TRAINS"

During my brief exploration on several journeys, the full service of smart and comfortable Glasgow area B.R. electric trains, with initial equipment troubles well out of the way, seemed to be functioning perfectly on all routes north and south of the Clyde. These trains are painted bright blue and are powered by high-tension a.c. collected from overhead wires. They give passengers full front or back views from the end cars, and they run at regular and frequent intervals. The trains are controlled by colour light signals, with the automatic warning system giving the driver a clear bell signal as each green indication is approached, or a warning "buzz" should it be yellow or red.

There is good publicity, including well-displayed maps and timetables, and there are various cheap fares between the numerous suburban or local stations, often of the island platform type. A good view is given of a section of the Glasgow docks as well as the River Clyde as it widens out towards the estuary, when the trains are running to and from an outer terminus at Helensburgh, not very far from some of the lochs, mountains and islands.

From the imposing Central Station, trains on the more recently introduced South Side services cross the river, then serve the Cathcart Circle, Kirkhill, and part of the Glasgow–Carlisle main line between Newton and Motherwell, their terminal. While I was on the last named section several red, and green, 4–6–2 steam locomotives, also a Type 4 diesel, passed, hauling evening express passenger, sleeping car and freight trains.





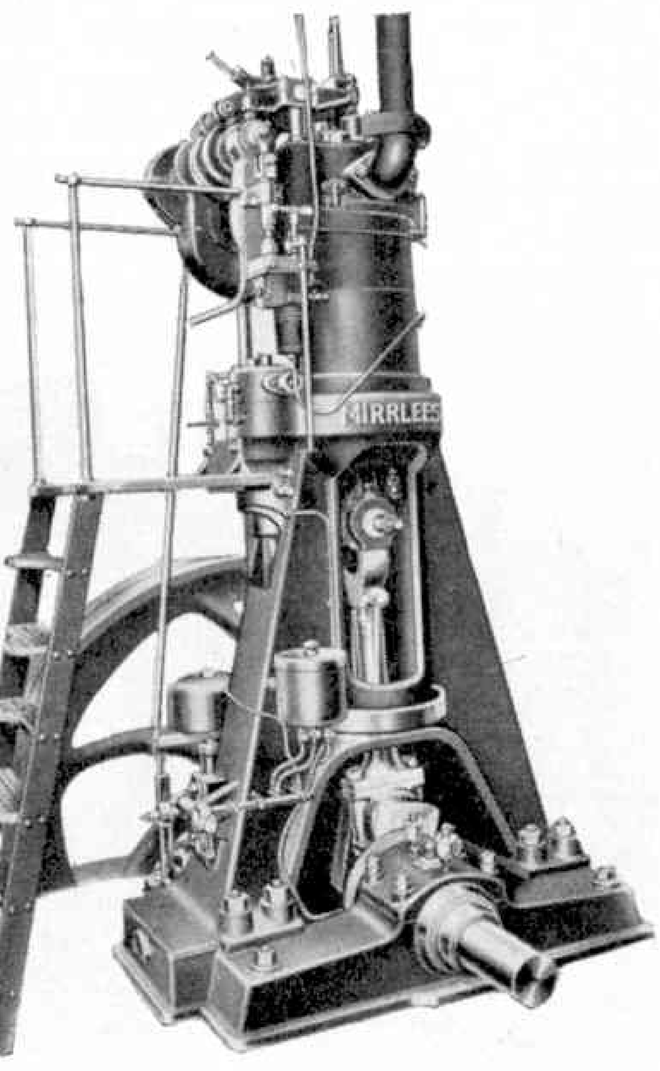
PIONEER DIESEL ENGINES

IN 1840, three brothers founded an engineering company, P. & W. McOnie, to produce cane sugar machinery. In 1848 they were joined by J. B. Mirrlees who became a partner, and in March 1897 the firm, then known as the Mirrlees Watson Co. Ltd., acquired an exclusive licence to manufacture and sell diesel engines in Great Britain.

By STANLEY OLIVER,
A.M.I.Mech.E.

Within a few months the first engine was built at Scotland Street Works, Glasgow, and underwent extensive tests at Glasgow Royal Technical College. This engine was the first of its kind in Great Britain and the third in the world. It is of the cross-head type with air injection and developed 20 b.h.p. at 200 r.p.m. Its single cylinder is of 30 mm. bore and the stroke 460 mm.

The engine was put into regular service on the company's premises and in 1908 was moved to the Hazel Grove Works of Mirrlees, Bickerton and Day Limited, in Cheshire, this firm having been formed in 1907 when Mr. Charles Day, appointed manager of Mirrlees Watson Co. Ltd. in 1900, moved to Cheshire. The firm is now known as Mirrlees-National Limited. The engine was in daily service at the Hazel Grove Works from 1908 until 1938 when it was loaned to the Science Museum at South Kensington, London, for exhibition purposes.



Shown left is a Mirrlees 50 P.C. "Standard" diesel engine which is kept as a museum piece at the Hazel Grove Works of Mirrlees-National Limited. This engine was built in 1911 and is a three-cylinder, air injection, open "A" frame type with integrally built two-stage air compressor and intercooler. It was rated at 137 b.h.p. at 250 r.p.m. It was supplied to the Farnham Gas and Electricity Company, Surrey, and drove a 90 kw alternator. After 43 years' continuous duty the engine was brought back to the Mirrlees works, in 1954, when Farnham Station was closed down.

A machine identical to this "Standard" type ex-Farnham engine was employed at Latchford Lock, on the Manchester Ship Canal, until recently for emergency pumping duty. It was installed in 1910 and was coupled to a 36-inch Drysdale pump through a Brush coupling.

About 1,000 "Standard" engines were built in one to six-cylinder sizes until 1937, rated from 50 to 330 b.h.p., a far cry from the present maximum rating of Mirrlees engines which has passed the 7,000 b.h.p. mark.

Right: The first British diesel engine. Above: The Mirrlees 50 P.C. "Standard" diesel engine built in 1911.

NEW RAILWAY BOOK

Interest in railway rolling stock as distinct from locomotives is increasing nowadays, and we have been pleased to receive a copy of *G.W. and W.R. Restaurant Cars* published by Monmouthshire Railway Society, who are to be congratulated on their enterprise. The booklet is now in its second edition and it provides a summary of restaurant car development on the "Western" as well as a numerical list of restaurant cars from 1897 to the B·R. stock of today. The list includes such details as dates, codes, dimensions, and various explanatory notes. Copies of the booklet can be obtained for 1/–, including postage, from the Monmouthshire Railway Society Distribution Dept., 36 South Street, Sebastopol, Pontypool, Mon.

Books For The Winter Evenings

Books are always in demand at Christmastime and make good companions during long winter evenings. The books reviewed below are among the titles recently forwarded to the "Meccano Magazine" and cover a wide range of interests.

Great Engineers by L. T. C. Rolt (G. Bell & Sons, 18/6) is one of a series of books concerning great men issued by the same publisher, and a fascinating book it is. In his foreword, the author makes it clear that in writing such a book he was determined to keep clear of the "few famous names" which, he says, appear over and over again in engineering biographies.

"It is no disparagement of the famous few to say that in the history of engineering they were not the only pebbles on the beach", he adds.

Mr. Rolt describes the lives of ten of these lesser-known, but still eminent, men and thereby does a service to engineering. Those chosen—and splendidly their stories are told—are Abraham Darby, who brought about his own industrial revolution by discovering the art of coke smelting; Thomas Newcomen, pioneer of steam power; William Jessop, canal and railway builder; Matthew Murray, who perfected the steam engine; Henry Maudslay who applied genius to the improvement of engineering techniques; Joseph Locke, railway builder and conqueror of Shap; John Fowler who pioneered the use of mechanics in agriculture; Benjamin Baker, pioneer of London's Tubes and designer of the Forth Bridge; R. E. Crompton, most widely remembered for his work in the electrical engineering field and finally the versatile Frederick W. Lanchester, genius of the internal combustion engine, car designer, pioneer in aerodynamics and poet.

All were men of might who left their mark on history, yet how modest some of them were. Jessop, for instance—"No engineer of his stature was ever more modest and self-effacing" says the author—and Murray, who delighted in giving others the benefit of his experience. Then there was the genial giant Maudslay, master of mechanical craftsmanship. He kept a collection of musical boxes in a library adjoining his workshop and liked to work to the sound of their playing through the open door. Thus in an age that knew nothing of radio did he anticipate that popular twentieth century programme, "Music While You Work".

* * * *

Trains Annual 1963 (Ian Allan, 10/6) lives up to its reputation in presenting the reader with a wide variety of railway topics, historical and current, with plenty of illustrations. Experiences from the running shed point of view in the earlier days of the A4 Pacifics make an interesting start to the contents, and descriptions of present-day operation in areas as far apart as the Callander and Oban Line, Manchester Victoria and Exchange Stations, and the Kurina–Narvik Iron Ore Railway, in Sweden, make first-class reading. There is also an interesting account of a journey in the cab of an English Electric Type 4 diesel. Appropriately, with diesels now in charge on the route concerned, C. J. Allen writes of 50 years of steam traction between Paddington and Plymouth, giving details of journeys with locomotives ranging from the City 4–4–0s of the G.W.R. to 4–6–0 Kings, with the addition of test trips made by a distinguished "stranger", L.M.R. 4–6–2 *City of Bristol*.

All sections of the book are appropriately illustrated, with some views in colour. Centrepiece is a striking view, in colour, of Clapham Junction from a painting by Terence Cuneo.

* * * *

Arco Handybooks can be relied upon to pack a lot of useful information into a small space. **Aluminium Craft,** by C. J. Robinson (15/–), shows how to make a number of attractive things out of aluminium, from a wall lamp bracket to room dividers, using a few simple tools. **Athletics,** by Peter Hildreth (15/–), is written by a journalist with a distinguished Olympic background. Stronger perhaps on track events than field this book manages to cover the essential techniques of modern athletics. Of particular interest are hints on training. Photographs and diagrams are excellent. **Repair of Domestic Electrical Appliances,** by F. G. Rayer (12/6), covers a wide range—heaters, power tools, irons, bells, radios and even Christmas fairy lights. The safety precautions are explicit and must be fully understood before starting. Anyone who has ever mended a fuse can now tackle more ambitious repairs with Mr. Rayer's expert guidance. **H.G.**

* * * *

There is often a demand at Christmastime for a modestly-priced gift for a young relative or friend. A series of books that offer a splendid solution to this problem are the **Hippo Books,** published by Longacre Press Ltd., at 3/– each. There is a wide range of books available catering for almost every taste and all of them follow the same straightforward but attractive plan—a left-hand page of text and an interesting facing picture. Some of the text is a little telegraphic but the great point is that it supplies the facts. There are twelve titles in the series consisting of the following: Racing Cars of the World; British Warships; Mammals of Great Britain; Reptiles and Amphibians of the World; Fighter Aircraft of the World; Airliners of the World; Bomber Aircraft of the World; Rockets and Missiles; Veteran and Vintage Cars; British Tramps, Coasters and Colliers; Passenger Trains of the World; Birds of Britain.

* * * *

The Book of Power Stations, by Geoffrey Gerard, A.M.I.C.E., F.R.S.E. (Frederick Warne & Co. Ltd., 10/6) has a title which leaves no doubt about its subject matter. Starting with a clear, simple description of electrical terms—so often used and so seldom fully comprehended by most of us—it goes on to describe the method of generating electricity. Following chapters show how the basic sources of power—water, steam, diesel motors and atomic energy—are harnessed to drive electric generators. There is an interesting account of the development of the grid system, linking the users of electricity with the power stations, and the use of switchgear in controlling output. The final chapter on careers in electricity supply is a useful guide to any young man thinking of a technical future. It is well illustrated with drawings and photographs and the author has succeeded in making a highly technical subject not only understandable but interesting—even to those who do not know an ohm from an ampere. **H.G.**

* * * *

Model Railway Handbook, 6th edition (Percival Marshall, 3/6), compiled by the staff of *Model Railway News*, maintains its usual high standard as a book of reference for miniature railway modellers. Scales and gauges, from TT to Gauge 1, methods of electrification, standard dimensions and so on, are among the more technical matters covered, while a review of proprietary-built ready-to-run locomotives, together with a section entitled *Trade Guide*, helps the purchaser to select equipment best suited to his purpose. Illustrations include half-tones and diagrams.

* * * *

Aircraft Annual 1963 (Ian Allan Ltd., 12/6) is a handsome book in every sense. Edited by one of the best known writers on aviation, John W. R. Taylor, who is Air Correspondent to the *M.M.*, it contains articles ranging from the future of the aircraft industry to the latest developments in communications satellites. It is lavishly illustrated, including some excellent colour plates of World War I aircraft restored to airworthiness and painted in the original colours. One interesting feature describes the formation and actions of the Japanese "Kamikaze" units whose pilots crashed their bomb-laden planes on to allied warships towards the end of the last war. "Kamikaze" means "Divine Wind" and refers to a storm which saved Japan from invasion in the thirteenth century by dispersing the fleet of the Mongol emperor, Kublai Khan. There is a good balance between civil and service aviation and the writing is technical enough to be interesting without being hard to understand. A first-class book for air-minded young people. **H.G.**

ROAD TESTING STARS OF THE MOTOR SHOW

By

JERRY AMES

I WONDER how many people have been entrusted with £8,000 worth of new motor car to test on a wet track? This happened to me shortly before the Motor Show, when I went up to Silverstone to drive the new Rolls–Royce Silver Cloud III. As I set off on tests, the downpour suddenly increased to a cloudburst of enormous intensity; coming up to Stowe corner at well over 80 m.p.h. visibility was considerably less than 100 yards. These track conditions were certainly a severe test of Rolls–Royce stability for I have seen nothing like them since the great "wash-out" race of 1951.

The power-assisted steering of the latest Rolls–Royce has been considerably modified to provide more "feel". Never was this more welcome than when I hit a young lake more than two inches deep, spreading right across the track, just before taking Club corner.

The first of these two illustrations shows the sleek and elegant Triumph Spitfire 4 which has all-independent suspension, a four-speed gear-box, front disc brakes and a top speed of 92 miles an hour. The picture below shows the T4, Rover's gas turbine family saloon with sporting performance and a top speed of 115 m.p.h.

ROAD AND TRACK

Hitting this vast water splash at just over 60 m.p.h. completely blotted out the road ahead. I expected it to throw the car all over the road, but there was just a slight tail twitch, easily controlled, and we were through. Never has the behaviour of a luxury touring saloon impressed me more than the handling of this new Rolls–Royce, the frontal design of which incorporates a four-headlight system. The engine now has 7 per cent more power and I was able to explore its greater acceleration without the embarrassment of excessive wheelspin.

I did not attempt to try for maximum speed which I understand is now 115 m.p.h. The car I drove was one of only four that had been completed, so had I bent it, there would have been some *very* red faces.

Car with "Bite"

After leaving Silverstone, the weather improved considerably and the Vauxhall Victor I was driving made good time to Coventry, where I was met by Mr. Harry Webster, Technical Director of Standard Triumph and responsible for their new Spitfire 4. After lunch he showed me round the smart little two-seater sports car, with attractive body by Italian stylist Michelotti; then he handed one over for me to try.

I found it a comfortable, open two-seater with plenty of "bite", but I kept the hood up, not trusting the weather; even so, visibility was pretty good and no water came in—it has wind-up side windows.

The car has been built from Triumph Herald components, the 1,147 c.c. o.h.v.

The four-headlight system of the Rolls–Royce Silver Cloud III is clearly shown in the picture at the top of the page. The bonnet line has been lowered to improve forward visibility. Increased leg room and more effective width is given by the rear seat and the front seats have been re-designed.

engine with 9 to 1 compression ratio develops 63 b.h.p. at 5,750 r.p.m., and is mated to an excellent four-speed gear box with remote control lever. Steering is rack and pinion, brakes are 9-inch discs at the front with 7-inch drums at the rear, there is a proper chassis slightly shorter than the Herald 1200 and, most important, a first-rate, all-independent suspension. So you see the new Spitfire 4 has all the right ingredients to make it a good sports car, plus better than average equipment.

On the road it would wind up to a genuine 92 m.p.h. in top, with a very useful 75 m.p.h. in third. The gear ratios are nicely spaced and the change is quick and positive. Acceleration is pretty good, too, being of the order of 0 to 50 m.p.h. in 12 seconds, but its most fascinating feature is its wonderful handling.

I would rate the new Spitfire 4 one of the safest small sports cars I have driven. Take it through bends and corners how you will, both front and back ends stay put. Finally, I persuaded the back to break away by putting my foot hard down in second and going through a right angle corner on a damp road, but a quick flick of the wrist and the car was straight again, so delightfully easy to control is this new Triumph. The firm has a winner here, especially at its price.

Experimental Car

My third unusual pre-Show motor car was Rover's front-wheel drive gas turbine T.4. On this occasion I sat on the front passenger seat while an old friend, Tony Worster, Chief Gas Turbine Development Engineer of Rover, did the driving. So far this is the only Rover gas turbine car I have *not* driven, but I understand this is to be remedied early in the New Year when T.4 gets its new two-speed gear box to improve take-off acceleration!

Like all experimental projects T.4 is continually being altered and fitted with different gas turbine engines in various stages of development. This time, it had a power unit delivering barely 100 h.p., while the last car I drove had 140 h.p., so you will appreciate that I noticed the difference. Even so, it would surpass with ease any family saloon up to 3 litres. The T.4 supplies the smoothest, most effortless form of motoring I know and with its normal 140 h.p. engine is going to be quite a family saloon. Its handling is first rate and it is incredibly easy to drive; more about it next year when we shall be hearing about production plans.

New Safety Seat

T.4, of course, is equipped with safety belts, like most fast cars of today. This is a subject on which my wife, Jean Ames, is extremely knowledgeable. She should be, for she has just designed the world's first child's car safety seat, after consulting the leading car manufacturers, top medical people and safety organisations. Called the "Jeenay" it is the only child's car seat designed to fit on the rear (safest) seat of any family or sporting saloon and is for children between the ages of ten months and five and a half years.

The properly moulded glass fibre chair is securely held in position by full-sized safety belting, with quick release, and the child has its own fully-adjustable safety harness with pin. This is a miniature parachute-type harness with quick release pin, easy for an adult to unfasten, but not children. The chair is easily washed and is detachable for use in the home. Lots of people wanted to make it, but finally it was given to Derrick Morley of Dover, because for £6 18s. 6d. he has produced a handsome seat complying in every way with the stringent safety requirements and comfort my wife insisted on.

The Jeenay Child's Safety Seat is the only seat specially designed to fit on the rear seat of all cars. It is securely anchored and the child is completely comfortable in a parachute-style harness. A pull of a quick release pin frees the child instantly. The sides, seat and back rest are in comfortable foam rubber trimmed with smart leather-type plastic.

Coventry Climax Decision

No engine manufacturer has done more to put British racing cars on the map than Coventry Climax. So it came as a great shock to learn that the firm is withdrawing from Formula One racing at the end of this year, although Leonard Lee, the Chairman and Managing Director, says they will provide service and spare parts for works teams and individuals who still wish to continue using the highly successful V–8 Formula One and other engines.

The reason for this withdrawal is the enormous cost of development to get an engine like the latest (*Cont. on page 510*)

Racing Personalities
Who Will Be World Champion?

TWO famous racing drivers, one a Londoner, the other a Scot, will do battle on Saturday, December 29, for the World Championship. The deciding race—the South African Grand Prix.

London-born Graham Hill, married with two children, fought his way into motor racing the hard way, by helping to prepare early Lotus cars and gained his first experience driving them for customers in races, finally talking Colin Chapman into giving him an occasional works drive. These were sometimes too occasional for Graham, who offered his services to the rival firm of Cooper. Colin Chapman, however, was determined to get him back at all costs, and this he did, with a useful contract for Graham. Last year Graham Hill moved into the BRM camp, and has risen to the top of the ladder.

Graham Hill's chief rival is top Lotus driver, Jimmy Clark, a bachelor sheep farmer from Scotland and a quick-witted, natural driver if ever there was one, who has moulded his style and methods on those of Stirling Moss. His chances are not quite as good as Graham's because only by winning the South African race can Jimmy become World Champion, whereas Graham Hill is far enough ahead to take it even if both drivers fail to finish.

The two are very good friends, both on the circuit and off; what is equally important, they are extremely good sportsmen. BRM and Lotus mechanics preparing their cars so meticulously have a heavy responsibility knowing that so much depends on their workmanship, because the chances of their drivers are so evenly matched. In fact, I would not put a dead heat beyond the bounds of possibility in this race. But until we know the result on the night of Saturday, December 29, all of us will have to contain ourselves in patience for not until then will the name of the new World Champion Driver be known.

CHRISTMAS DOLES FROM BYGONE DAYS

Kirkby Lonsdale Church, Westmorland, which has several Christmas benefactions. The photographs illustrating this article are by the author.

By ARTHUR GAUNT

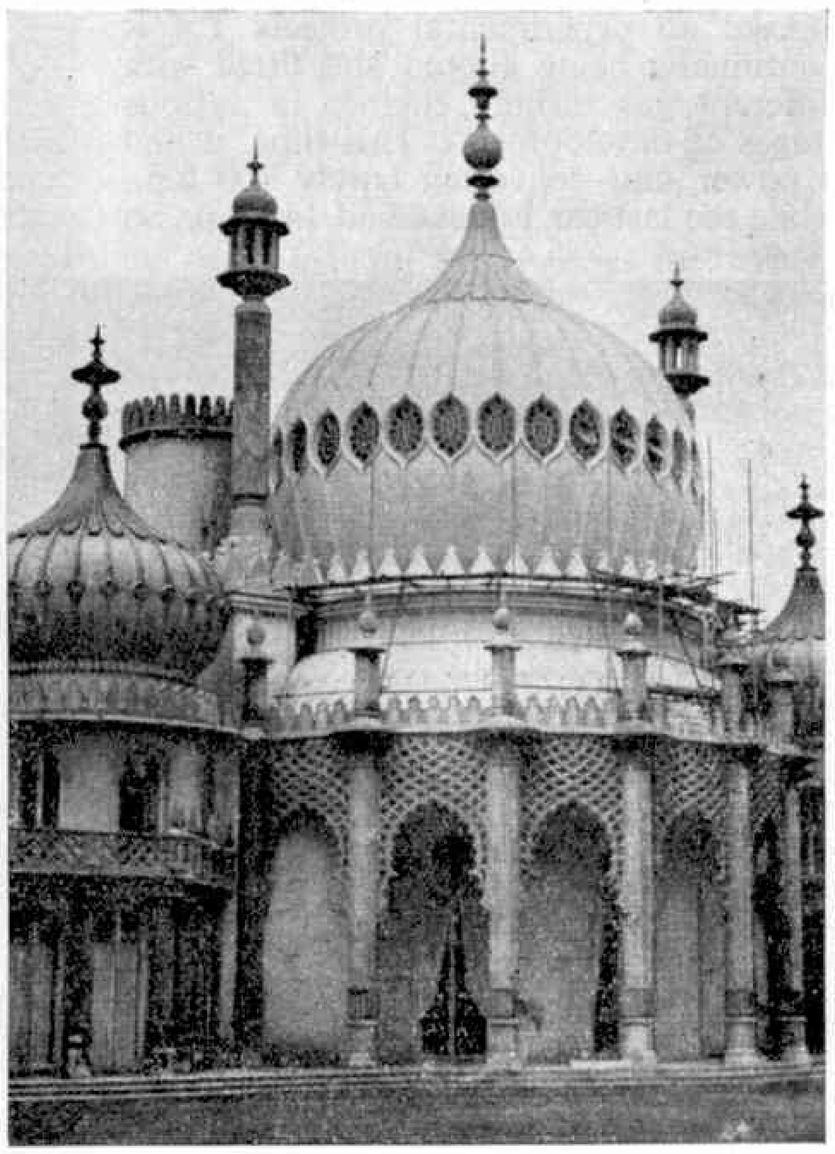
NEEDY people all over Britain will be receiving gifts of coal, clothing, food and money this Christmas, thanks to kindly men and women who arranged such distributions many years ago. The Christmas dole, in fact, is a widespread institution, although few people realise just how many of these old gift schemes continue to operate. Altogether there are more than 15,000, and some have been operated annually for 300 years or longer.

Skipton, Yorkshire, has a combined Yuletide charity which includes a dole started in 1643 by the Earl of Cumberland, and about £70 is shared among the deserving poor of the town. Lord Craven founded a similar Christmas distribution there in 1647, and his generosity also benefits needy people at Ripon, Knaresborough and Boroughbridge.

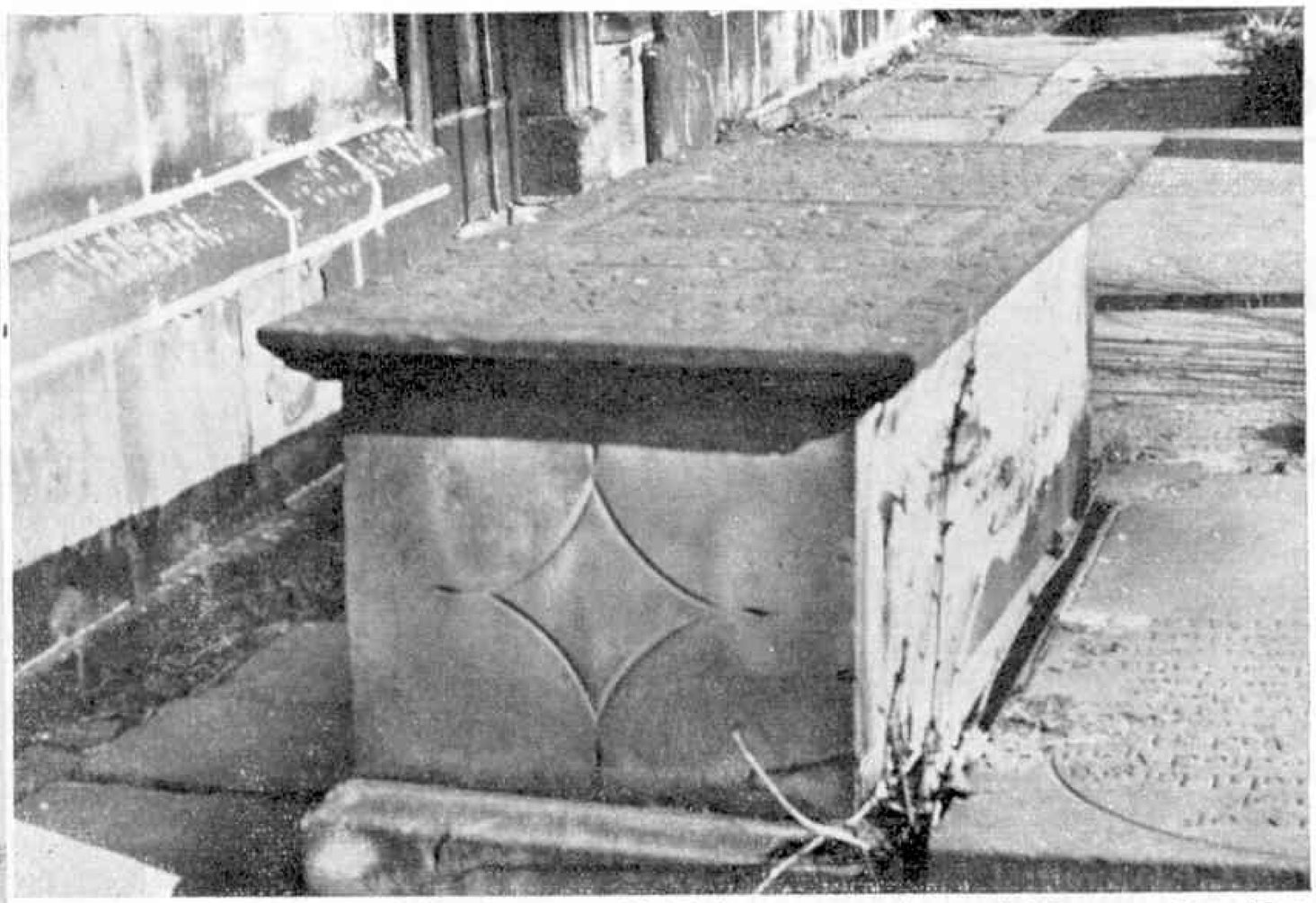
Older still is a legacy left by the famous Dick Whittington, which provides good cheer at this season for a considerable number of Londoners. He bequeathed a sum of money to build almshouses at the foot of Highgate Hill, and the fund has grown with the passing years so that, today, there is a surplus available for gifts at Christmas.

Most Christmas doles, however, are associated with churches, although a certain number are the concern of town and borough councils. In many an old church you will see displayed a board listing the local Christmas charities, together with the date when they were started and the names of those who founded them.

Such a notice in Mansfield Parish Church, Nottinghamshire, reveals that nearly 300 years ago a certain Rowland Dand left a plot of land to the churchwardens and stated that the rent was to be used for the purchase of cloth, this fabric to be made into eight coats for the poor of the parish, at Yuletide.



Left: The steep Main Street at Haworth, Yorkshire. Boys in this parish may apply for free clothes at Christmas. Right: A number of Yuletide bounties are distributed at the Royal Pavilion, Brighton, pictured here.



Pinner Church, Middlesex (left) where a special Christmas sermon is preached in connection with a yearly dole. Above: Isaac Bowcock's tomb at Tong, near Bradford. He founded several Yuletide distributions.

Kirkby Lonsdale, Westmorland has a Christmas dole known as "The Townsman's Gift", which enables some 30 poor families to receive free coal, bread and blankets. Provision for this to be done was made by a Norfolk resident who was a native of the town.

Another Kirkby Lonsdale dole, connected with the parish church, provides for small sums of money to be given to twenty of the poorest inhabitants.

Curious conditions are attached to some of these distributions. For instance, boys at Haworth, Yorkshire, may apply for a free outfit of clothes (suit, overcoat, boots, cap and scarf) at this season each year, but to qualify they must attend the Christmas Morning service at the parish church. The gifts of clothing are made in accordance with a legacy left by a man called Midgley in 1723. He also arranged for the boys to have a good dinner on Christmas Day.

Other generous people in times past took steps to ensure that poor people would not go hungry at this season of feasting. Some three centuries ago, a clergyman left enough money to provide 104 sweet loaves for the poor of Deptford, London, but the fund grew to such a size that in recent years up to 1,000 people have received vouchers for groceries at Christmastime.

At Wellingborough, Northamptonshire there is a December distribution of foodstuffs in connection with a 300-year-old charity which began as a weekly dole of loaves. This fund was not large, and as the price of bread increased it was necessary to make the loaves smaller. Finally, they became so tiny that the charity was altered to an annual one at Christmas. It is this change that has made possible the giving away of various items of food.

Wartime food rationing also caused changes to some free feasts, cash being given instead. Just over one hundred years ago a lady at Broomfield, Somerset, bequeathed money for a Christmas dinner to be given to twelve poor people of the parish. She even drew up the menu, stating that it was to consist of roast beef, plum pudding, bread and vegetables.

Nowadays this particular distribution consists of ten shillings in cash, which is paid to the oldest inhabitants.

At Hartshead, in the West Riding of Yorkshire, the vicar of the village church gives away more than 200 yards of cloth after a service just before Christmas. Also distributed are stockings and loaves. About 35 men and women benefit from this charity, which goes back to 1820.

Tong Church, near Bradford has a Bowcock Dole started by Isaac Bowcock in 1669. He also founded charities at Keighley and other places. His tomb can be seen in Tong churchyard, and the vicar gives away about £10 each St. Thomas's Day (December 21).

Clergymen themselves sometimes benefit from such old charities. A parishioner at Pinner, Middlesex made provision for a payment of 20s. to the minister at Pinner Church, on condition that he preaches a special sermon every Christmas Eve and distributes money to poor people attending the service.

Brighton has several Yuletide doles, and some of them are handed out at the Royal Pavilion there. Other share-outs take place at the municipal offices, and among these charities is a gift of cash replacing an annual Christmas dinner for fishermen.

One of the biggest Christmas distributions is held at Wednesbury, Staffordshire, and has been carried out regularly since the seventeenth century. John Hopkins arranged for coats and dresses to be given to poor people after a service in the parish church. Originally only three men and three women received garments, but the value of the bequest has increased to such an extent that in recent years well over one hundred folk have benefited.

Still another big Christmas charity, concerning no fewer than 200 parishes in South-East England, began in a strange way. Known as "Dog Smith's Christmas Bounty", it was started by a certain Alderman Henry Smith who made a practice of wandering round the countryside dressed like a tramp and accompanied by a pet hound. When he died it was found that he had arranged for food and clothing to be given away every Christmas at places where he had been welcomed in his old clothes, but that villages which had turned him away were not to share in his bounty.

An early reference to plum pudding is to be seen on a board describing local charities in Blatherwycke Church, Northamptonshire. It refers to a gift of land in 1684, and states that the rent is to be used for buying six old people a plum pudding on Christmas Day.

The oddest of all our Christmas charities concerns another Christmas pudding, an outsize one weighing more than two hundredweight. It is prepared at Paignton, Devon, to be shared by the poor; but it will not be made this year—nor, indeed, until the year 2001, for it is a bounty which comes round only once every 50 years, and the last distribution of Paignton's own Christmas "pud" took place in 1951.

SWISS PORTER CARRIES NEARLY HALF A TON!

The Pilatus PC–6A Turbo-Porter with 530 h.p. Astazou II turboprop engine in which our Air Correspondent made the trip described in these Notes.

WHEN I visited the ninth International Air Show, in Venice, a few weeks ago, I met a very remarkable Porter—not of the human variety, but a Swiss-built aeroplane which is named the Porter because of its ability to carry all kinds of heavy loads. Built by the Pilatus Company, it is what we call a STOL (short take-off and landing) aeroplane. This makes it especially useful in countries like Switzerland, where airfields are often small and surrounded by high mountains. The original version had a 340 h.p. Lycoming GSO–480 piston engine, but the machine in which I was able to fly in Venice was one of the new PC–6A Turbo-Porters powered by a French Turbomeca Astazou II turboprop of 530 h.p.

As well as the Swiss pilot and myself, there were on board a French air correspondent and three passengers from India, where a piston-engined Porter, fitted with skis, has already distinguished itself by landing on mountain snowfields at heights up to 19,000 feet above sea level with a full half-ton payload.

To say that the flight was interesting and exciting is an understatement. The take-off and landing would hardly have disgraced a helicopter, and events in between were different from anything I have previously experienced in a fixed-wing aeroplane. Within a few seconds of leaving the ground we were back over the point where we had started our take-off run, at a height of 800 feet, *without ever having flown beyond the boundaries of the small grass aerodrome*. The pilot later demonstrated the aircraft's gentle stall by letting it lose speed in a climb until its nose dropped. Immediately, he pushed a red button in the centre of the instrument panel, for maximum power, and without requiring any other action on his part the Turbo-Porter nosed up into a rocket-like climb.

This ability to switch to full power in a flash, simply by pushing a button, is a tremendously important safety feature,

AIR NEWS

By

John W. R. Taylor

especially if a pilot misjudges his landing on a small airfield and has to climb away for a second attempt. At the other extreme, the Turbo-Porter is able to fly safely and steadily at such slow forward speeds that it appears almost to be hovering motionless. This makes it ideal for search and rescue duties and for military observation.

A Partenavia Fachiro—brother to the small high-wing monoplane I–SILK.

FILMED IN FLIGHT

Venice was full of film stars and movie-makers at the time of my visit, which coincided with the annual Film Festival. Not to be outdone, we had our own film-making session at the air show, during which I spent an interesting 20 minutes chasing after an Aermacchi-Lockheed 60 light transport, from the open door of which Pressmen and Newsreel cameramen poked an array of cameras in our direction.

On this occasion, the aircraft in which I flew was one of the little four-seat Fachiro II high-wing monoplanes built by Partenavia, at Naples. Its registration was I–SILK, and this was appropriate as it is difficult to imagine a smoother, silkier little aeroplane.

Powered by a 180 h.p. Lycoming engine, it cruises at 135 m.p.h. and has a range of 560 miles on 35 gallons of petrol. The cabin is roomy and comfortable, although the Fachiro spans only 30 feet and has a loaded weight of little more than a ton. The high wing ensures a good view for the passengers, which is very welcome during a flight over such a lovely place as Venice. Add to these attractions its fine handling qualities and you have an aircraft that will provide some real competition for the American lightplanes now invading the European market in large numbers.

EVEN-BETTER GONDOLA

Some of you may remember that after the last Venice Air Show, two years ago, I wrote an article for the *M.M.* entitled "My Gondola had Wings". The owner of the "gondola", Mr. Herwig von Heider of Dusseldorf, Germany, arrived this year in an improved version. Known as the

Bolkow 20/, it is a four-seat, low-wing monoplane of all-wooden construction, powered by a 180 h.p. Lycoming engine. This means that it has one more seat and 30 more horsepower than the Bolkow/ Klemm K1 107C of two years ago. It is also fully aerobatic, as Mr. von Heider demonstrated during the flying display with a fine series of loops.

My flight with him made a fitting ending to my visit. As we cruised quietly and comfortably over the islands, lagoon and canals, at a height of about 3,000 feet, I took my own film of Venice on a small movie-camera. When I look at it this winter, it will remind me of the sunshine of Venice and the aeroplanes and the friendly people of all nationalities I encountered at this most pleasant of all air shows.

INSIDE STORY

Although rockets are being used more and more to carry meteorological instruments high into the atmosphere, it is unlikely that they will ever replace entirely the cheaper balloon for work of this nature.

The trouble with present-day balloons is that if they are well filled with gas they rise quickly but often burst before reaching the required height. On the other hand, if they are only partially filled, to prevent bursting when the gas expands at high altitude, they rise so slowly that they often drift out of radio and radar range before reaching a very great height.

To overcome these drawbacks, British "met" experts are now testing a "balloon-within-a-balloon". This consists of an underfilled balloon contained inside another which is well filled to ensure a rapid rate of ascent. When the well-filled balloon bursts in the upper atmosphere, the inner balloon carries on, lifting the "met" instruments to the required height.

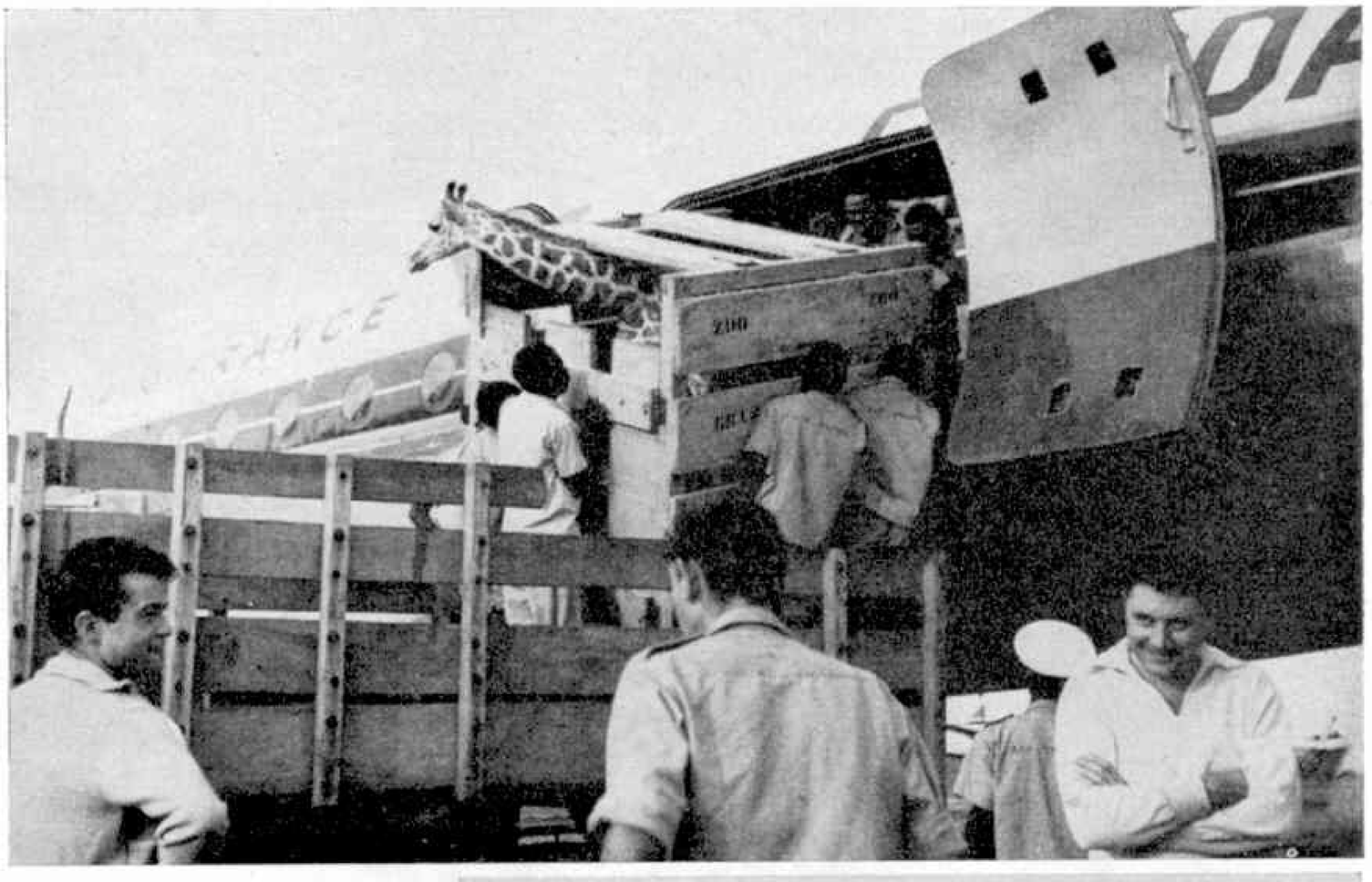
If the new balloon is successful, it will help to make our weather reports even more accurate than they are now.

NEWS FOR SPOTTERS

Although Lockheed sold a total of 165 Electra turboprop airliners to operators all over the world, these aircraft have been seen only rarely at British airports. Air Ceylon's infrequent services into London Airport were operated by a single Electra hired from K.L.M. until last April; but K.L.M. itself, the only European Electra operator, used its fleet mainly on routes to the Middle East.

Since November 1 the position has changed, for K.L.M. is now flying Electras instead of Viscounts on its Amsterdam–London service. As a result, spotters at London Airport can add to their list of "possibles" eleven L–188C Electras, registered between PH–LLA and PH–LLL (no J) and named after planets and constellations.

Incidentally, the Amsterdam–London route is the oldest in the world to have been operated continuously (war years excepted) by the same airline. K.L.M. first flew between the two cities in 1920,



Top: It would not be fair to say this giraffe was "sticking his neck out" to travel by air for he arrived at his destination quite safely, thanks to Air France, by whose courtesy the picture is reproduced.

using open-cockpit converted bomber aircraft flying at 75 m.p.h. "In flight service" consisted of providing passengers with leather jackets and helmets, goggles and, in cold weather, hot water bottles. Today, the 400 m.p.h. 76-seat Electras do the trip in one hour, with their passengers sitting in armchairs in an air-conditioned cabin.

NECK NO BAR

A few years ago I wrote an article about all the animals who travel by air, calling it "Only Giraffes Don't Fly". I pointed out that they would probably have to stay on the ground until airliners either became immense or were fitted with sunshine roofs!

I have to report this month that the title of my story is no longer true, for Air France recently carried a giraffe on one of their cargo-planes. To make it as comfortable as possible, they put the animal in a special crate through which it could poke its neck when it stood up. Nevertheless, it was probably glad to get to its destination and have a good stretch, as a crick in that much neck might be a painful business.

HELICOPTER GETS ROUGH

The idea of using aircraft to knock down buildings in peacetime is new, but full of promise, according to the Kaiser–Nelson

Helicopter deals a body blow in its demonstration of how to demolish a building. Photograph by courtesy of Sikorsky Aircraft, U.S.A.

Steel and Salvage Corporation, a demolition firm in Cleveland, Ohio.

On Saturday, September 22, they attached a 1,000-lb. steel ball to the end of a long cable hooked under the fuselage of a Sikorsky S–58 helicopter chartered from World-Wide Helicopters. The aircraft then took off and hovered over a 204-foot high building by the side of the Hudson River, West New York. By swaying the fuselage, (*Cont. on page 510*)

The Modern British Winter

By
DAVID BOWEN, F.R.Met.S.

SINCE the turn of the present century our winters have become warmer by an average of approximately two degrees Fahrenheit over the country as a whole. This may not appear to be a very significant rise in temperature, but it does, in fact, make a considerable difference to our weather, for this fairly slight degree of extra warmth, as reflected on any winter season's record, can be gained only by the presence of long mild spells and comparatively short cold ones. But, of course, it is one thing to talk about the average winter weather during the recent past and another to discuss any particular year during that period. As we saw last year, Southern and South-Western England had considerably more than their usual week to ten days of cold winds and snow and, in the North and East of Britain there were periods of Continental or even Arctic severity.

It so happens that, even during milder epochs in our climate, markedly colder-than-average winters occur about once every eleven or twelve years. Previous to the 1961–62 season, which, it will be remembered, was cold in its early and later stages—but gave us, to compensate, a fairly mild January—

Snowbound track. Picture at the top of the page, reproduced by courtesy of "The Aberdeen Journal", shows the havoc snow can cause to our railways.

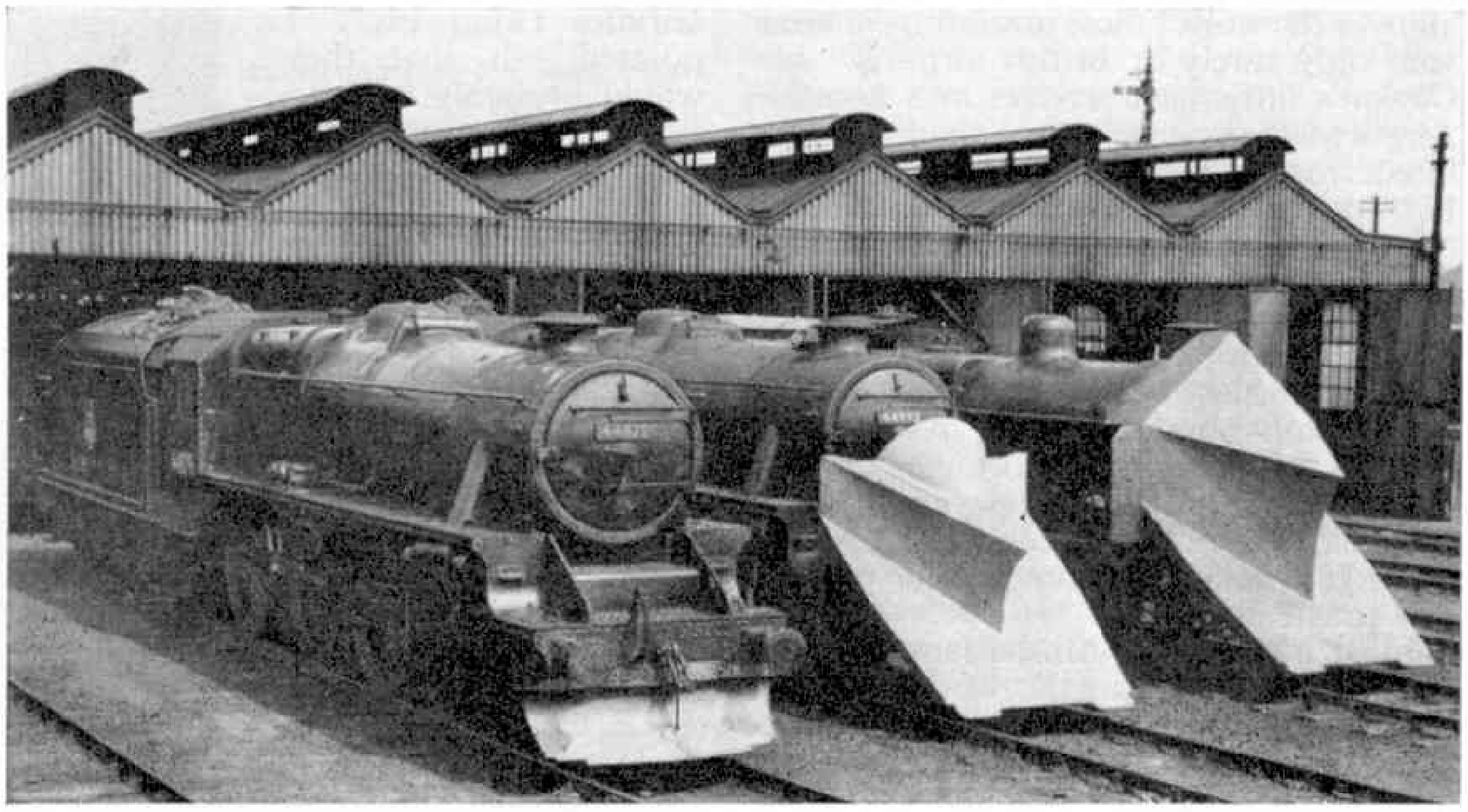
● *December is here and with it the wintry weather. But, says the writer of this article, mid- to late January and early to mid-February are the favourite visiting times of the coldest winter spells.*

the last cold winter of any consequence was that famous one of 1946–47. Britain at that time was short of fuel, and politicians might well have benefited from a long range forecast!

More recently, there occurred a single bitterly cold month, in 1956. After an unusually mild January, February gave temperatures that were up to 10 degrees colder than average in some districts, and snowfall amounts were prodigious.

What conclusions may we draw, today, from the statistics available? First of all, it is true to say that, whatever the vagaries of a particular season, the weather's behaviour does follow some kind of pattern on more occasions than not. While, on the one hand, the British meteorological calendar is full of surprises, there are a number of weather events that take place, year after year, without very much variation: for example, combined research teams of the Meteorological Office and the Naval Weather Service have shown that nearly all the winter months produce

Ready for the assault. This British Railways photograph shows three types of snowplough used for clearing the lines. Extreme left: ex-L.M.S. class 5 4–6–0 fitted with a No. 6 all-steel nose plough. These miniature ploughs are fitted at the start of the winter period to all engines of this class working through vulnerable areas and remain fitted until Spring. Centre: Another class 5 fitted with a No. 3 all-steel heavy duty plough, used for tackling medium to heavy drifts. Right: Ex-L.M.S. class 4F 0–6–0 engine carrying a No. 2 all-steel heavy duty plough, complete with cab and tender protection apparatus. These are used only for very heavy snow plough work, usually with an assisting engine, and can deal with drifts up to twelve feet deep.



An engraving of the Great Frost Fair on the River Thames during February 1684. Between 1650 and 1684 British winters were colder than at any other time during the past 2,000 years.

A snowstorm in Piccadilly, London last January during a winter that brought many sudden changes of temperature.

stormy periods during their final weeks, with rain and/or sleet in the south, and snow, sleet and rain in the north. It is highly improbable that such a feature could be due to pure chance.

The experts admit that the winter months produce longer periods of "unseasonable" weather than spring, summer or autumn. During the past 100 years the Royal Greenwich Observatory has recorded three times as many days with above-average temperatures between December 1 and February 28–29 as between June 1 and August 1. Another interesting fact about our winter climate is that the temperatures of Falmouth and Penzance are practically as high as those of Cannes and Monte Carlo, some 400 miles nearer the equator. In December and January Falmouth is actually warmer, on average, than Marseilles.

We could not make these claims if we based our statistics on those of Victorian days, when, according to the popular "Rhyme of the Months" at that time, it was accepted without question that:

Cold December brings the sleet,
Blazing fire and Christmas treat.

The same rhyme described January as the month which "makes our feet and fingers glow".

December today hardly ranks as a cold month, but it certainly has a habit of being unpleasant. It generally contains at least two periods of strong winds or gales, and there are often severe gales in northern and western areas during both the first and the final weeks of the month. It is, however, in the final week that temperatures tend to fall sharply; quite frequently the colder weather breaks out on Boxing Day or December 27. Early in the month the gales are more often than not accompanied by mainly mild conditions.

The middle two weeks of December generally contrast sharply with the first and final weeks of the month, for at this time winds tend to be much slacker and fogs are frequent. Industrial fogs from northern and Midland towns and from the London area will spread laterally across surrounding countryside, for the atmospheric temperature structure is then such that air is prevented from rising vertically for any distance. But the new "Clean Air" smoke regulations are certainly making a marked reduction in the opacity of most of our fogs nowadays.

In our national weather lore collections there are a number of sayings (some quite unscientific, to say the least) that relate to long-range forecasting. They are kept alive today because, now and again, they are indeed correct. But they should not be regarded as infallible. To give one example, the Saxons believed that if the New Year fell on a Sunday it would bring a good winter, a windy spring and a dry summer. January 1, 1961, was a Sunday, and it is true that the winter was not too severe, that the spring was windy (it nearly always is!) and the early summer was dry. But July and August began the customary wetter trend of that year's summer season.

A better saying—and one that is founded on fact—tells us that "as the day lengthens, so the cold strengthens", and it is true that the most intense cold of any winter seldom arrives until the nights draw out and at a time when we are sometimes tempted to think that there will not be any winter at all. Mid- to late January and early to mid-February are the favourite visiting times of the coldest winter spells, and more often than not, they arrive hard on the heels of a really mild sequence of days and catch the country unprepared.

The most intense January frosts in our climatic annals were those of 1881 and 1947. But for the most sustained severity of weather we must look back to January 1814. It was then that the last "Frost Fair" was held on the ice-locked Thames; nearly the whole of Britain was snowbound and for several days London itself was all but isolated. Most of the main roads were blocked by drifts, which were commonly from 25 feet to 30 feet deep, and in some places stage coaches were completely engulfed. At no time during this Arctic January did the temperature in London rise above 41 degrees.

In the typical modern British winter the final days of January, stormy and boisterous as they are, seldom bring widespread snow to southern counties, but winds are generally cold, northerly or north-westerly, and Scotland and Northern England, as well as North Wales and parts of Northern Ireland, may experience heavy snowfall and considerable drifting.

The first days of February tend to reverse the situation. Mild weather spreads north-eastwards at about this time, giving temperatures in the upper 50's Fahrenheit in the extreme south and south-west. But the change to colder weather, when it does arrive, will often hit south-east England and the Home Counties while Scottish and northern areas are still covered by mild Atlantic airs. February, in fact, can be regarded as our most treacherous month because of its frequent quick changes of temperature.

In the month of February it is usual to expect a temperature drop of 20 degrees F., or more, at some point in at least one year in three. If future winters increase just a little in their general severity—and this is now a distinct possibility—this ratio may increase to two years out of three.

March is a reasonably consistent month nowadays and gives (*Cont. on page 510*)

Now, An Ambulance With Flashing Light

And A Striking New Saloon With The Accent On 'Vogue'

DINKY TOYS NEWS

By THE TOYMAN

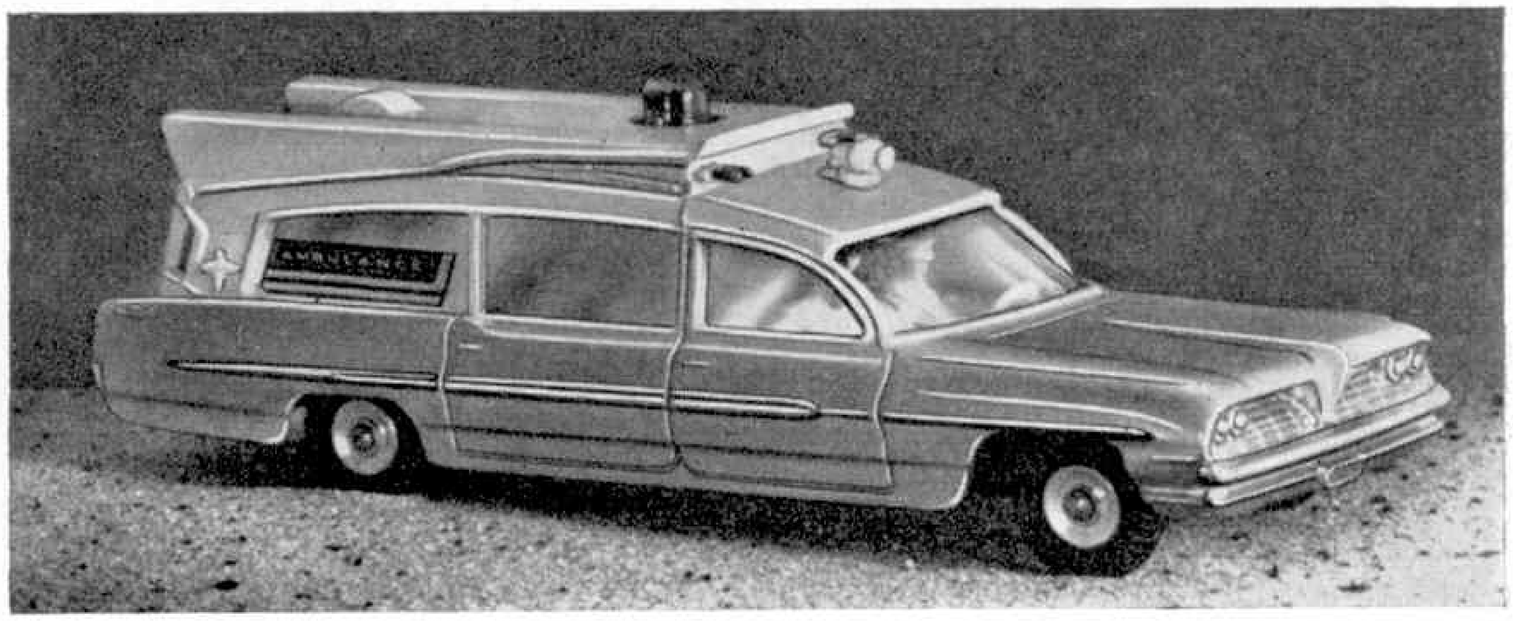
I HAVE more interesting news for Dinky Toys enthusiasts this month, but I feel that at this time of the year it is always my first duty to wish my readers, wherever they may be throughout the world, a very happy time at Christmas. It is, of course, a wonderful time of the year for young folk and old, and certainly it is the period when many Dinky Toys layouts grow rapidly, from late December onwards, through the good offices of aunts and uncles, brothers and sisters and relatives who find that Dinky Toys make *most* acceptable Christmas presents. And, of course, I have no doubt that many Dinky Toys models finish up in stockings and pillow cases on Christmas morning!

We have two further models to talk about this month although the first one is really an adaptation of that most striking model the Superior Criterion Ambulance, which we introduced in September.

Going back a little beyond that point you will remember that in August we brought on to the market the Airport Fire Tender with flashing light and it was realised, even at that time, that it would be a splendid idea to put the Criterion Ambulance out with a similar device as soon as possible. This impression was strengthened enormously by the tremendous reception which was given to the Fire Tender which is certainly one of the most popular models to appear for a long while.

The flashing light has gripped the imagination of our collectors and now they will be able to have a second model to link up with the Fire Engine in road scenes and to give the same completely realistic impression of urgency as it moves along.

One point I should emphasise here, to avoid any misunderstanding, is that the patient on the stretcher is not included with the flashing light model. It was necessary to leave him out because the battery operating the light itself is fitted in the interior of the model. Instructions for



The Superior Criterion Ambulance, now fitted with a flashing light, is seen in close-up on the right. The picture at the top of the page shows how this ambulance can be used in an American context. A Ford Fairlane has crashed and overturned on to its side. The Ambulance hurries up and there is a police car already at the spot. A knot of spectators has quickly gathered as is always the case when an accident happens.

The clean-cut outlines of the Singer Vogue and the set of the twin headlamps are shown in this close-range shot.

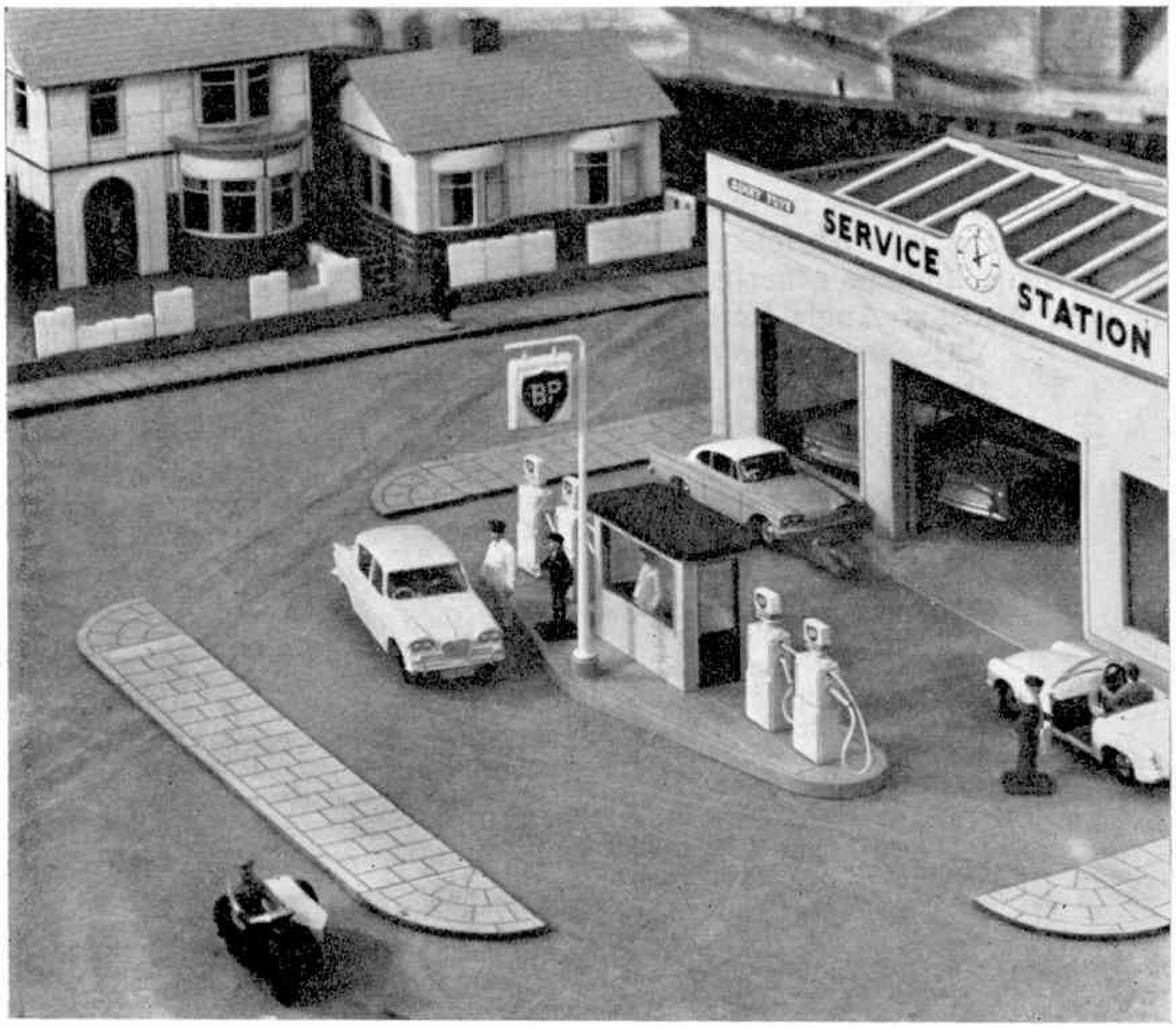
fitting the battery, etc. are included and replacement batteries and bulbs can, of course, be purchased separately.

There are some other alterations which are important. The latest Criterion model, which is No. 277 on the Dinky Toys list as opposed to No. 263 (the patient and stretcher model) has a two-tone finish. Roof and window frames are ivory and the lower part of the car is a most attractive shade of blue. Two windows behind the driver and attendant are in a deeper shade still than the bodywork, and the decorative beading, crimson in the earlier model, is in silver. You see the model illustrated in the close-up at the foot of page 490 and I also draw your attention to the picture at the top of the previous page which shows the Ambulance in a road crash scene.

Dinky Toy drivers are fortunate, you know. When they have crashes they can put matters right in a few minutes. Actual drivers are not so lucky. I want to plead with those of you who are old enough to drive—and a large number of adults are among Dinky Toys enthusiasts—to drive with exceptional care at this busy time of the year. And I want to plead that when those who are now below driving age become old enough to take the wheel they will use commonsense and courtesy in all traffic conditions.

Well that, I think, about covers the new presentation of the Criterion Ambulance. Those of you who are interested in details of the actual model will recall that these were given in the September issue of the *M.M.* If you did not manage to get that particular copy and you would like some of the details I will be glad to supply such information as I have if you send me a request for them.

Standing by the petrol pumps is the new Singer Vogue with its elegant frontal outline. This studio shot reveals how Dinky Toys and accessories, in conjunction with Bayko, can be used to make a typical present-day scene. Other Dinky Toys models in the photograph are No. 270 AA Motor Cycle Patrol, No. 143 Ford Capri and No. 113 M.G. B Sports Car. The Petrol Pump Station B.P. is No. 783 in the Dinky Toys list and the Service Station, which provides such an excellent background effect, is No. 785.



I now pass on to the last of our models for 1962. As you will already have gathered from the heading, it is the Singer Vogue, a model of an immaculate car which is fast becoming one of the most popular in the intermediate range of family saloons. Manufactured by the Coventry Road Works of Singer Motors, Ltd., Birmingham, the Vogue is powered by a 4-cylinder o.h.v. engine of 1,592 cc. capacity which has a compression ratio of 8.3 to 1 and a power output of 66.25 b.h.p. Its overall dimensions are: Length 13 feet 9¼ inches, width 5 feet 2¼ inches, height 4 feet 10¼ inches, wheelbase 8 feet 5 inches, front track 4 feet 3½ inches, rear track 4 feet 0½ inches. Although from the rear and side views the Singer Vogue is not dissimilar from the Singer Gazelle or the Hillman Super Minx, frontally, there is a considerable difference. The Vogue is fitted with twin headlights in addition to the side lights.

Just as the prototype Vogue has become increasingly popular, so will the Dinky Toys model appeal enormously to the collector in its bright and attractive yellow finish. It has four-wheel suspension, windows, seats, steering wheel and Prestomatic steering, which, as all Dinky Toys enthusiasts know, enables you to control the direction of the model with only fingertip pressure on the bonnet. You see the detail, as faithfully reproduced in our miniature, in the picture at the top of this page.

Readers may be interested to learn that Singers hold an important "first" in motoring—it is their claim that they were the first British manufacturers to offer independent front suspension and fluid-drive clutchless gear change—and this in 1934! It is also interesting to note that, before the second world war, Singers were the only car manufacturers in the world to guarantee engines against cylinder bore wear. I am sure you will agree with me when I say that all these achievements are highly commendable and offer convincing proof of the craftmanship of the Singer Company.

I would like to finish my notes this month by giving you some hints on how to give your layout a winter "coat", so to speak. Model layouts cannot, of course, incorporate rain (*Continued on page 510*)

MECCANO FUN FOR CHRISTMAS

THE Christmas season offers a good opportunity for young model-builders to display their ingenuity in devising, from Meccano, some simple toys to amuse their party guests. This month, therefore, I am describing three such models all of which show excellent possibilities in this direction.

The first is the Boxer and Punch Ball, which you see illustrated in Fig. 1. This amusing figure can be set in motion by a *Magic* Motor connected to the 2″ Pulley on the shaft of the model.

The base of the model is a 5½″ × 2½″ Flanged Plate and to one end flange are bolted two 5½″ Strips. To the upper ends of these a 2½″ Strip is attached by an Angle Bracket. This forms the stand for the punch ball, which is represented by a Meccano Loaded Sack. The Sack is suspended from the 2½″ Strip by Cord and attached to the base of a Driving Band, which is gripped under the base by two Fishplates.

The body of the boxer is built up from two Flat Trunnions, to the upper end of which are bolted an Angle Bracket and a Fishplate. To the Angle Bracket is attached, by a lock-nutted bolt, a 2½″ small radius Curved Strip 1. The Fishplate supports a 1″ Pulley fitted with a Rubber Ring, A ½″ Bolt is locked in the boss of the Pulley by a set-screw and holds the Pulley in position.

The arm that strikes the Sack is a 2½″ × ½″ Double Angle Strip 2 bolted to the upper end of the boxer's body. The lower end of the body carries two Angle Brackets and these are attached to the legs by lock-nutted Bolts 3. One leg is a 2½″ × ½″ Double Angle Strip, and the other is a 2½″ Strip fixed to the base by an Angle Bracket. Another Angle Bracket is attached to the rear of the body and to it a Fishplate 4 is bolted.

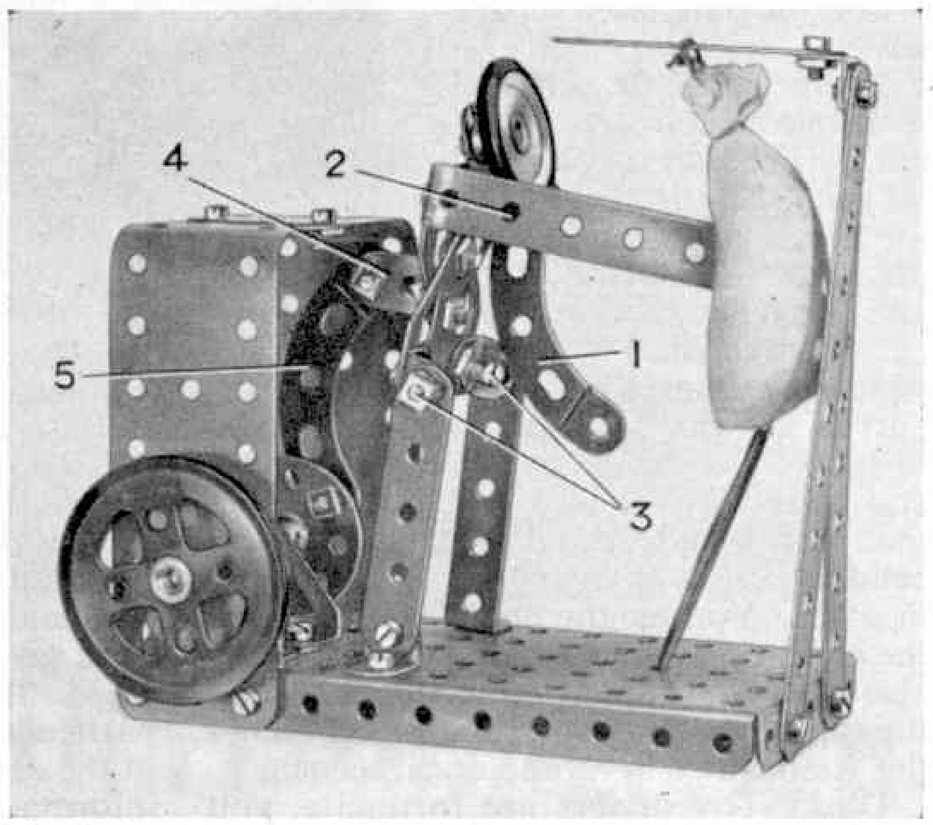


Fig. 1. An amusing model of a boxer practising on a punch ball. It is operated by a Meccano Magic Motor.

"Spanner" Presents

Simple Toys For The Youngsters

Two Trunnions, each spaced from the base by two Washers, provide bearings for a 2″ Rod. This Rod carries at one end a Bush Wheel and at its other end a 2″ Pulley. One end of a 2½″ small radius Curved Strip 5 is lock-nutted to the Bush Wheel and its other end is similarly attached to the Fishplate 4.

Parts required to build the Model Boxer and Punch Ball: 2 of No. 2; 2 of No. 5; 4 of No. 10; 5 of No. 12; 1 of No. 17; 1 of No. 20a; 1 of No. 22; 1 of No. 24; 30 of No. 37; 6 of No. 37a; 9 of No. 38; 2 of No. 48a; 1 of No. 52; 1 of No. 90a; 2 of No. 111a; 1 of No. 122; 2 of No. 126; 2 of No. 126a; 1 of No. 155; 1 of No. 186a; 2 of No. 189.

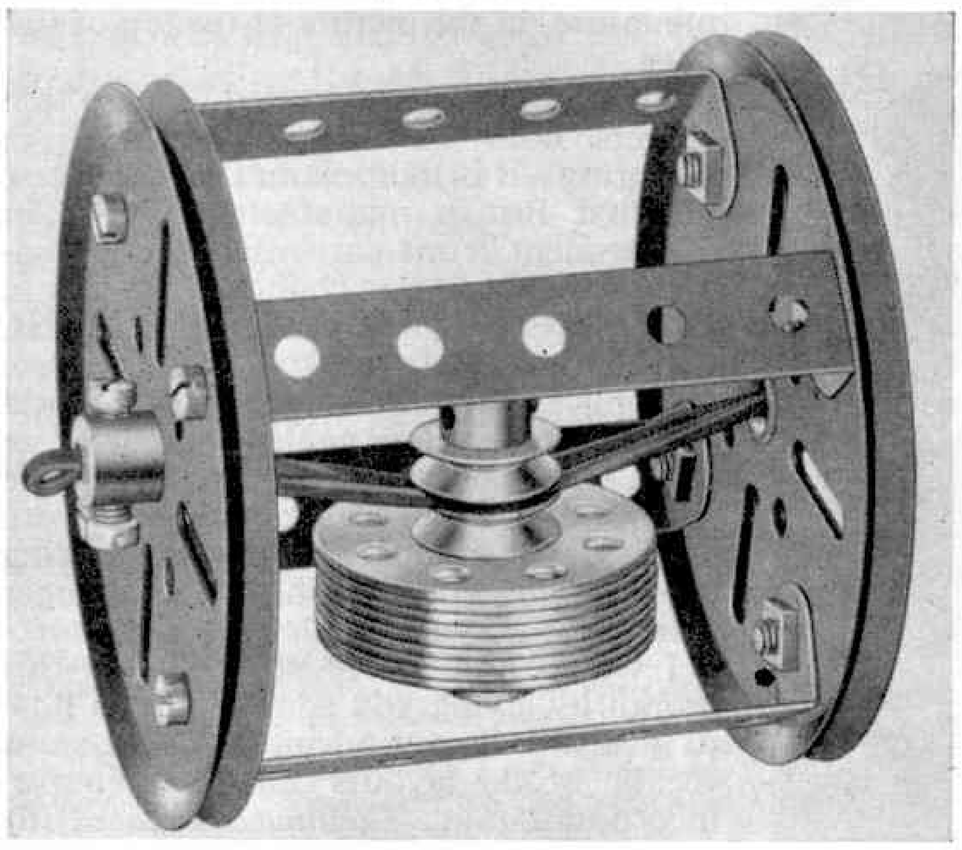


Fig. 2. The "Cum-Bak". A puzzling toy that will cause lots of laughter.

The "Cum-Bak"

The simple device shown in Fig. 2 is another amusing toy that will provide fun for even the youngest members of the family. When the gadget is rolled along a level surface, it will always return to its starting point. This is a toy that proved popular with Meccano builders years ago and may truly be said to be making a "come-back".

In the lower picture on this page the model has not been cased in so as to allow the operating device to be clearly seen, but if a Red Plastic Plate or a Strip of cardboard is bolted around the Double Angle Strips to conceal the mechanism, the action of the gadget is very puzzling to onlookers not "in the know".

The model is made very easily by bolting four 2½″ × ½″ Double Angle Strips between two 3″ Pulleys. A 6″ Driving Band is then passed through the bosses of the Pulleys and held firmly in place by bolts screwed into their bosses. A ½″ fixed Pulley, a ½″ loose Pulley, Wheel Discs and a Collar are placed on a 1½″ Rod, and the Driving Band is passed between the two Pulleys which are then pressed together and fixed on the Rod, so that the Driving Band is gripped tightly in position.

The Pecking Hen

My third model is a very simple toy that can be easily and quickly assembled, and which will keep the younger members

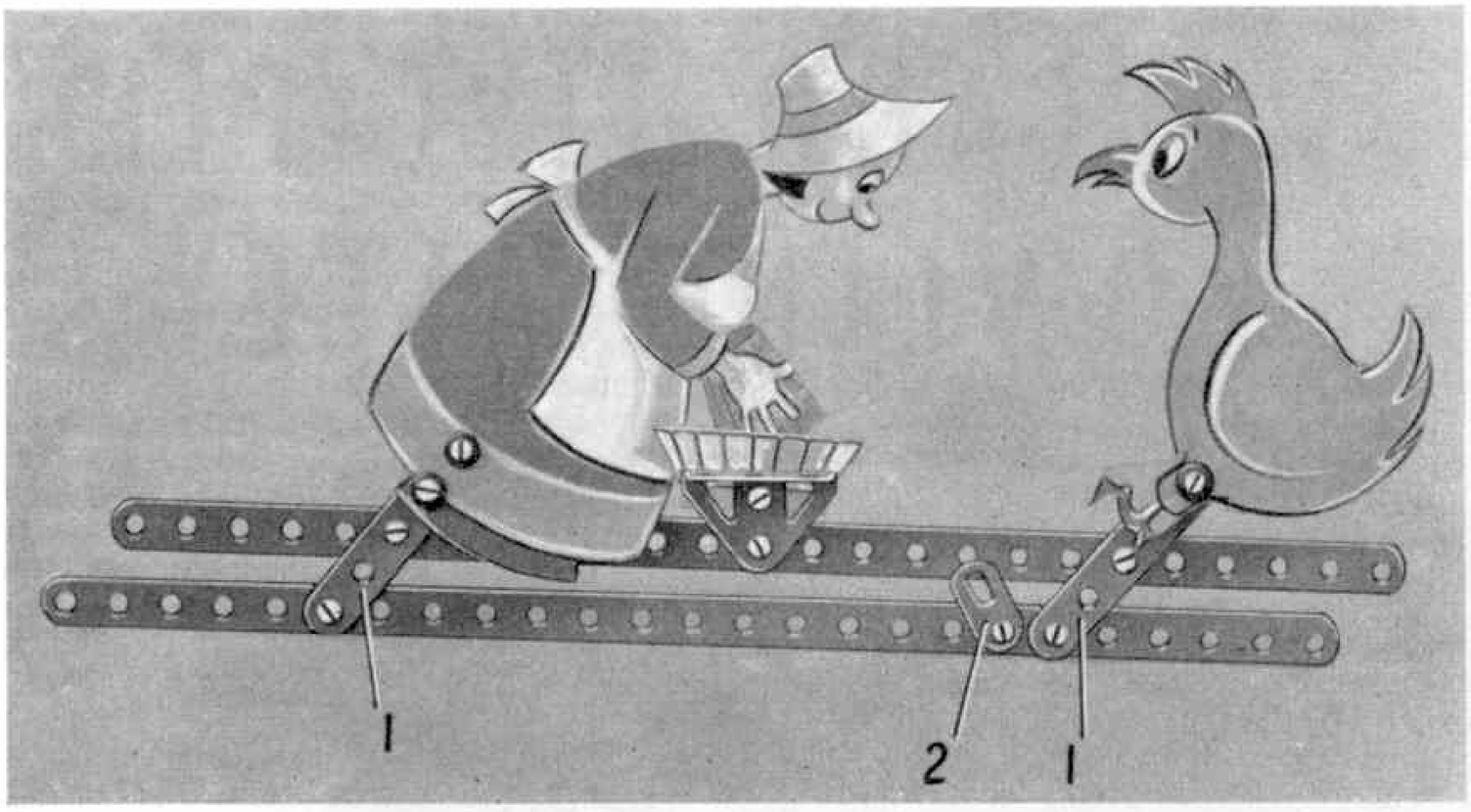


Fig. 3. This "Farmer's Wife and Pecking Hen" toy forms an amusing novelty for a young child.

of the family amused; it is shown in Fig. 2. This toy is operated by sliding the horizontal 12½″ Strips in opposite directions. This causes the farmer's wife to fill the food trough and the hen to attack his meal vigorously.

The 12½″ Strips are connected by locknutted bolts to the 2½″ Strips 1, and the food trough is supported by a Trunnion bolted to the 12½″ Strip. A Fishplate 2 is fixed to the lower 12½″ Strip, and acts as a stop to prevent the hen from diving too greedily into his food.

Suitable figures should be drawn on paper and gayly coloured. The paper should then be glued to thick cardboard and the figures carefully cut out. They should then be bolted to the 2½″ Strips 1 as shown.

THE STORY OF JU-JITSU

By JOYCE AND RALPH STRANGER

THE first account of Ju-Jitsu in this country was given in *Pearson's Magazine* in 1899, by a Mr. E. W. Barton-Wright. He was an English engineer who had lived in Japan and learned the art of self-defence from the Japanese. He was very proficient.

When he came back to England he brought two experts with him, with the idea of founding a School of Self-Defence in this country. But he needed publicity, so he went to *Pearson's*, and his demonstration was so effective that the Editor commissioned two articles from him. Barton-Wright did not use the name Ju-Jitsu, but christened the new art Bartitsu, using his own name as a basis for the practice.

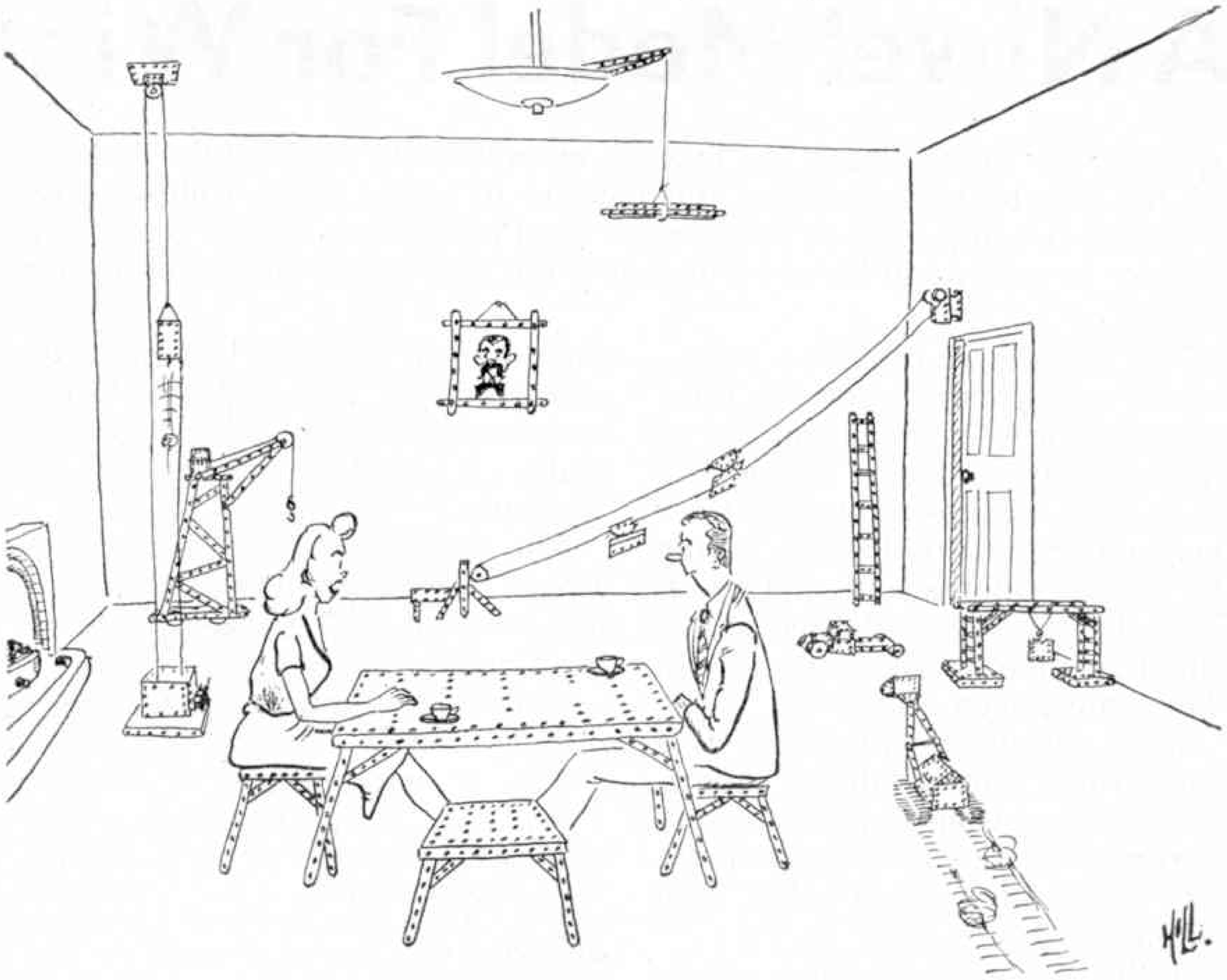
At first he was able to secure only music-hall engagements, and toured the country for the whole of that year. He founded his school in the last months of 1899, and the school was, in fact, the beginning of the Boodokwai-a-Ju-Jitsu Club in London which is still functioning.

It is thought that Ju-Jitsu was first originated in China more than 2,000 years ago, having been invented by lamas of the old monasteries there. These men were often attacked by robbers and they defended themselves by pushing, kicking and tripping up their attackers.

Later on a Japanese doctor called Akiyama Shirobei Yoshitoki went to China, to finish his studies, and saw the monks engaged in mock fights. He was so intrigued by their methods that he took lessons, becoming an expert. As he was a doctor he was able to make the practice more scientific, basing it on what he knew of the weak points of the human body, which made the system infallible. Each new expert added better and improved methods as he learned the art, until it reached the high pitch of scientific precision that it enjoys today.

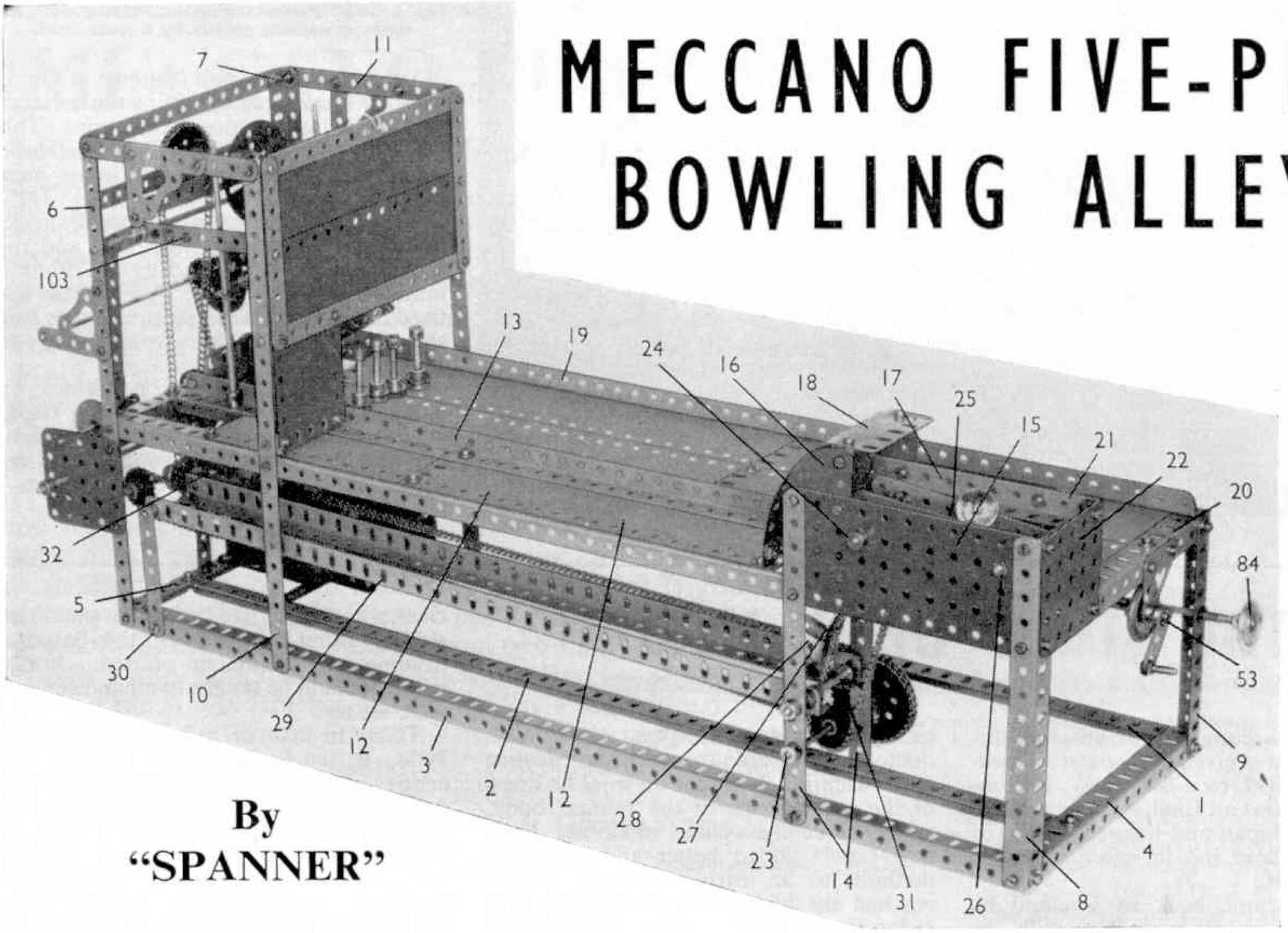
The first people in Japan to practice the new skill were the Samurai, the warrior class, who kept it, like their other practices, strictly secret. But when the Samurai disappeared, a number of new schools, where it could be taught to all and sundry, were set up.

Today Ju-Jitsu, or, as it is usually called, Judo, is taught in many schools and centres of adult learning. It is an art that deserves more widespread teaching, for, among other things, it enables a man or woman, even if comparatively weakly built, to defend himself or herself against a much stronger adversary. In these days, it would be of great benefit to people who are otherwise without any kind of defence against thugs.



"And now he wants an Accessory Outfit."

MECCANO FIVE-PIN BOWLING ALLEY



By
"SPANNER"

A Novel Model For Winter Evenings

AN indoor game which has become exceptionally popular throughout the length and breadth of this country in recent times, following its long reign as a top sport in America, is Ten-Pin Bowling. There is scarcely a city or large town in Britain which does not now possess its own bowling alley.

This month, we present a miniature of this splendid game—a Five-Pin Bowling Alley, made entirely of Meccano. It is a model that is sure to provide endless amusement for the builder and his friends during the winter months and, indeed, it could be the ideal adjunct to the Christmas party when teams can play against each other.

Since ten-pin bowling itself is a game which attracts all age groups there is no reason why the five-pin bowling alley illustrated here should not prove just as popular with people of various ages.

In the real thing, the pins are reset by complicated machinery after each player has had his shot or shots, and in the model we have endeavoured to create, on a smaller scale, a similar mechanism in Meccano.

The model can set up five pins in a row, sweep them away and return the bowling ball to the bowling position.

This is how you go about building the model:

THE FRAME

Construction of the frame should start with the base, which is formed from three 24½″ Angle Girders 1, 2 and 3 and also two 7½″ Angle Girders 4 and 5. This is connected to a similar rectangle by two 12½″ Angle Girders 6 and 7, one 7½″ Angle Girder 8 and a 5½″ Angle Girder 9. Bolt two 12½″ Strips 10 to the 24½″ Angle Girders 1 and 3 and join them at the top by 5½″ Strips 11 to the 12½″ Angle Girders 6 and 7. Two 7½″ × 2½″ Strip Plates, edged by 7½″ and 4½″ Strips, are attached to the 12½″ Strips 10 with Angle Brackets. One side is lengthened by a 3½″ × 2½″ Flexible Plate, supported on a 2½″ × ½″ Double Angle Strip bolted to the Strip 10 and the 18½″ Angle Girder 13.

Two 9½″ Strip Plates 12, overlapped seven holes, are bolted to the 24½″ Angle Girders, with the 18½″ Angle Girder 13 placed as shown. The 7½″ Strips 14 are bolted in position, supporting the 5½″ × 2½″ Flat Plate 15. On the inside of the model a 4½″ × 2½″ Flat Plate and a 2″ Flat Girder 21 replaces the Flat Plate 15. Secure the Semi-circular Plates 16 to the Flat Plates and at the same time bolt the 5½″ Angle Girders 17 on the inside. A 4½″ × 2½″ Red Plastic Plate 18 is fastened to the 9½″ Flat Plate 12 and the Semi-Circular Plate 16 by Angle Brackets. Between the Angle Girders 13 and 19, are fixed two 9½″ and two 12½″ Strip Plates, supported by two 5½″ Strips and the Angle Girder 20. Next attach a 2½″ × 2½″ Flat Plate 22 by an Angle Bracket to the Flat Girder. A 3½″

Fig. 1. General view of the Bowling Alley, with pins set in position.

Rod 23 carries a 1″ and a 2″ Sprocket Wheel, and a second 3½″ Rod 24 has a 1″ Sprocket Wheel fixed in the centre and is connected by Chain to the lower Sprocket Wheel. Two 4½″ Strips 25 are held between two pairs of nuts ¾″ apart on a 3″ Screwed Rod 26, which is fastened to the Flat Plate and the Flat Girder with nuts, one on each side locked together. In the fourth holes of the Strips 25 a 1″ Screwed Rod with four nuts holds the Strips steady at ¾″ distance apart. The Strips rest on the Rod 24. A Hinge 27 is fastened to the Chain by a bifurcated paper fastener, and a 1″ × ½″ Double Bracket 28 is placed under the Hinge and fastened to the Chain by another bifurcated paper fastener, missing two links of Chain.

BALL RETURN CHUTE

Place two 18½″ Angle Girders 29 on the 3″ Rod 31. These are held by Collars so that their inside edges are ¾″ apart. A 3½″ Strip 30 is bolted to the other end and spaced away by a Collar. The Angle Girders are connected by a 1½″ Strip, and the inner Angle Girder 29 is fastened to a 5½″ × 3½″ Flat Plate 32 by an Angle Bracket. Two 1″ × ½″ Angle Brackets attached to the Flat Plate 32 are bolted to the 24½″ Angle Girder by the Bolts 33. A 4½″ Angle Girder 34 is bolted to the edge of the Flat Plate 32 to guide the balls on to the chute.

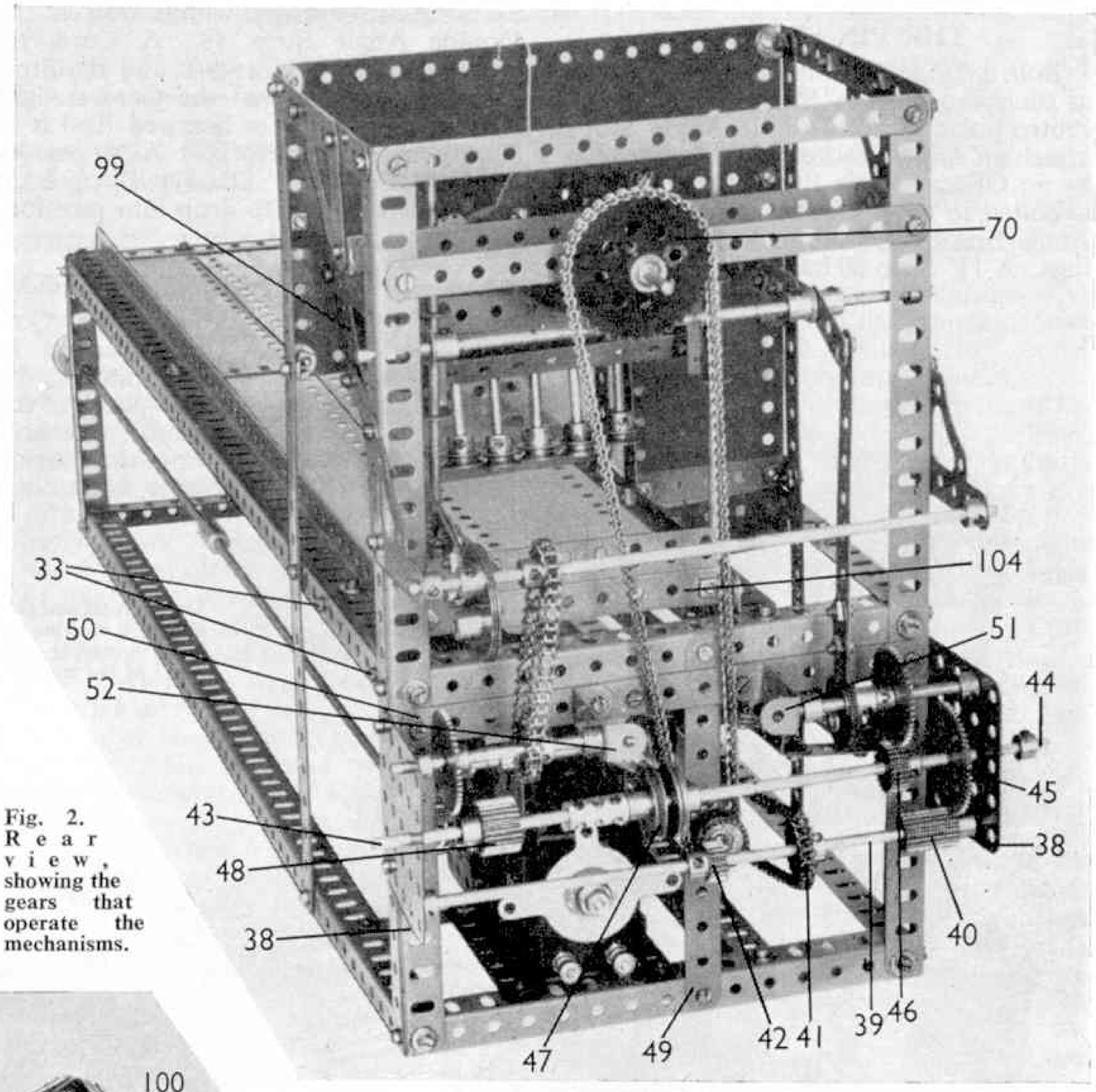


Fig. 2. Rear view, showing the gears that operate the mechanisms.

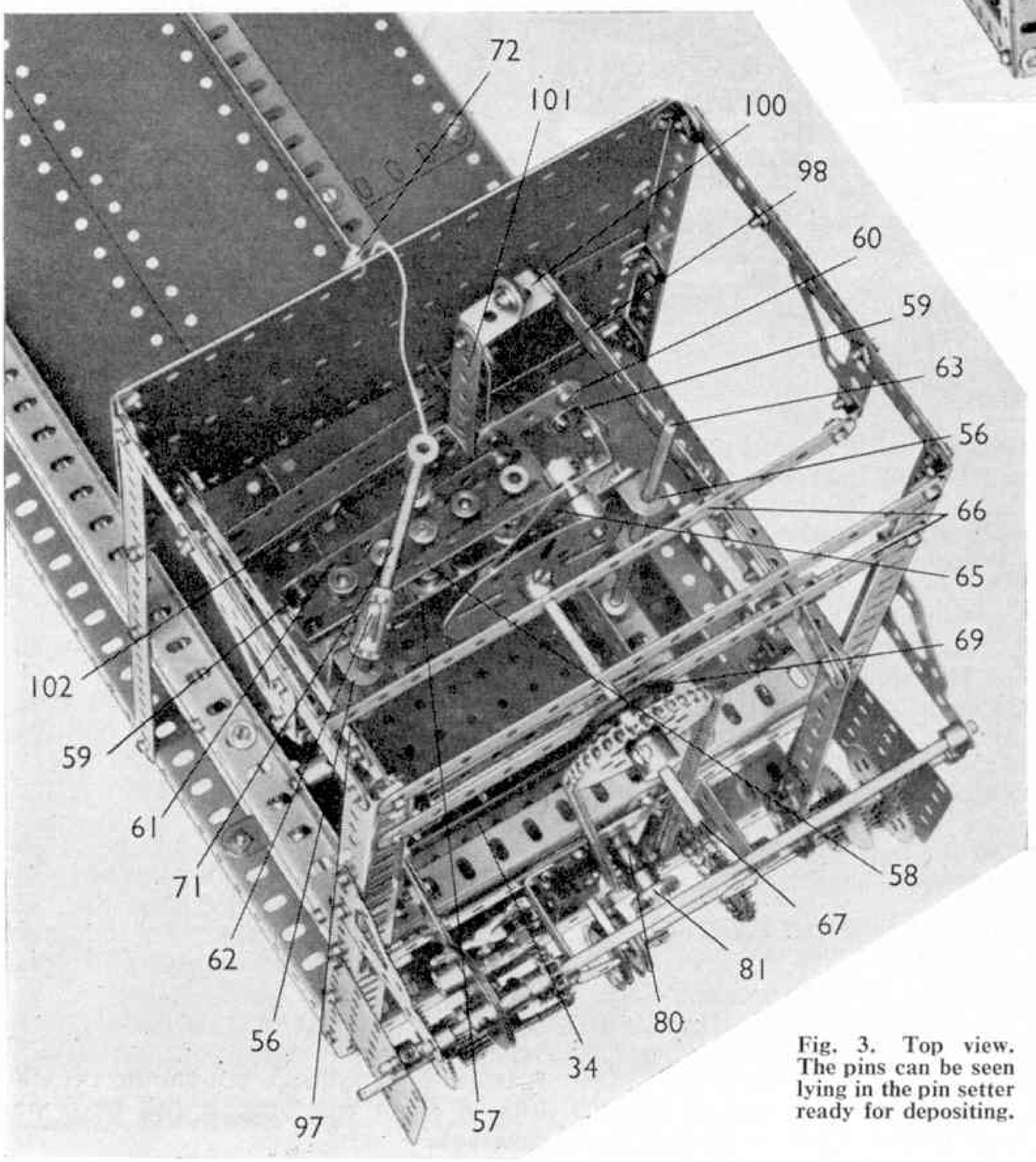


Fig. 3. Top view. The pins can be seen lying in the pin setter ready for depositing.

MOTOR DRIVE

An E15R Motor is bolted to the Angle Girder 5 and a 5½″ Strip fixed between the Angle Girders 1 and 2. The side plates of the Motor are extended by 3″ × 1½″ Flat Plates. A reduction train of Gear Wheels and Pinions giving a 36 to 1 ratio is fitted, starting with a 7/16″ Pinion on the motor shaft. The 7/16″ Pinion drives a 60-tooth Gear Wheel, a ½″ Pinion driving a 57-tooth Gear Wheel, the latter train being repeated twice. All the Rods are 2½″ long, except the final one carrying the two 1″ Sprocket Wheels 35 and 36, which is a 3½″ Rod. Sprocket Wheel 35 drives the 2″ Sprocket Wheel 37 on the Rod 23. Next bolt two 2½″ × 2½″ Flat Plates 38 to the 12½″ Angle Girders 6 and 7. On an 8″ Rod 39 secure a ¾″ × ½″ Pinion 40, a Sprocket Wheel 41, and a ½″ Pinion 42. A 6½″ Rod 44 is joined to a 3″ Rod 43 by a Coupling and on it is secured a 57-tooth Gear Wheel 45, a ¾″ Pinion 46, two 1″ Pulleys 47, and a ¾″ × ½″ Pinion 48. Bolt a 5½″ Strip 49 and a 7½″ Strip 50 to the Angle Girders as shown. Two 1½″ × ½″ Double Angle Strips 51 and 52 are attached to the 7½″ Strip 50 and also a 1″ Corner Bracket at the back of the 1½″ × ½″ Double Angle Strip 52. A compound rod 53, consisting of two 11½″ Rods and a 2½″ Rod, joined by Couplings, has a Coupling 55 secured at one end which carries a 1″ Rod that engages between the 1″ Pulleys 47. The other end of the Rod 53 is journalled in a 1½″ Corner Bracket and carries a Crank with Threaded Pin. The 1″ Pulley with Rubber Ring presses against the Corner Bracket. The Rod 53 will bring down the Pin remover and also move it towards the rear, to clear the "deck", by putting the different motions in gear.

THE PIN SETTING

Bolt a $1\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip 56 at each end of a $4\frac{1}{2}''$ Strip 57, and in the centre holes of the Double Angle Strips attach an Angle Bracket which is extended by an Obtuse Angle Bracket that in turn is bolted to a $4\frac{1}{2}''$ Double Angle Strip 58. Angle Brackets 59 are lock-nutted to the lugs. A $1\frac{1}{2}''$ Strip 60 has Fishplates bolted at each end; one is secured to the Angle Bracket 59, the other to a $3\frac{1}{2}''$ Strip 61, which is bolted to the other Angle Bracket 59. A $6\frac{1}{2}''$ Rod 62 is attached by a Threaded Coupling to the framework, whilst the $6\frac{1}{2}''$ Rod 63 is secured by a Rod Socket. The Double Angle Strips 56 slide up and down on these rods. Next lock-nut a $2\frac{1}{2}''$ Strip 65 in the centre of the $4\frac{1}{2}''$ Strip 57. Two $7\frac{1}{2}''$ Strips 66, one bolted to the Angle Girders 6 and 7, and the other to the Corner Gussets attached to the $5\frac{1}{2}''$ Strips 11 are fixed in place. A $3\frac{1}{2}''$ Rod 67, journalled in the $7\frac{1}{2}''$ Strips 66 has a Face Plate 68, a 1" Pulley with Rubber Ring 69, and a 2" Sprocket 70 secured to it. An Adaptor for Screwed Rod fastened to the Face Plate is connected to the $2\frac{1}{2}''$ Strip 65 and held by a Collar. The Rubber Ring presses against the $7\frac{1}{2}''$ Strip 66. A Coupling on Rod 62 supports a $2\frac{1}{2}''$ Rod 71, on the end of which is another Coupling carrying a $1\frac{1}{2}''$ Rod and Collar. It is so adjusted that as the motion reaches its highest point the Collar presses on the $3\frac{1}{2}''$ Strip 61, closing it within 3/16" of the Double Angle Strip 58. A Cord 72, attached to the framework and the Strip 61, is adjusted so that the Cord is tight when the Adaptor for Screwed Rod is at "20 mins. past o'clock". As it moves towards "half past", the "jaws" open up and allow the Pins to drop into position.

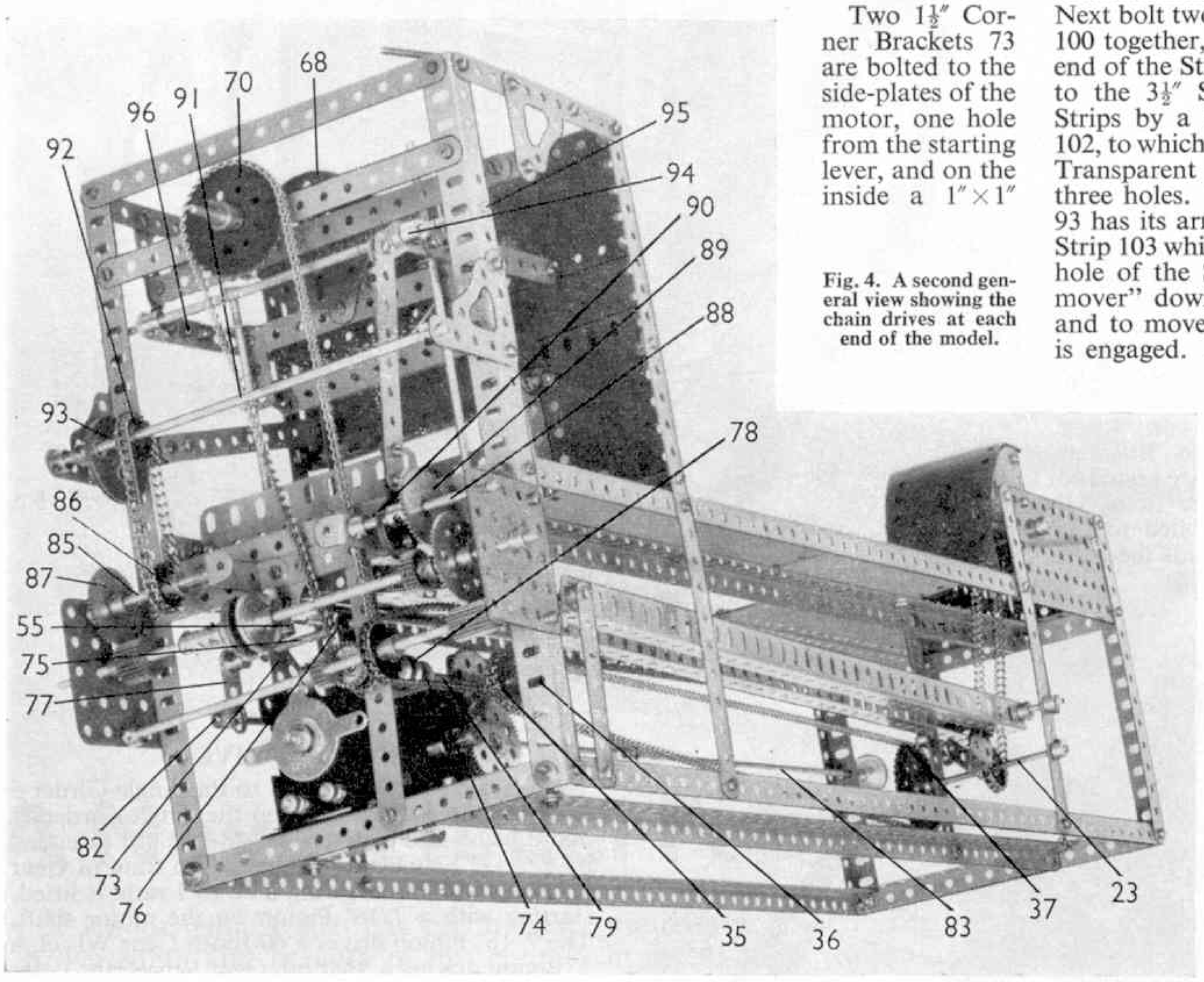


Fig. 4. A second general view showing the chain drives at each end of the model.

DRIVE FOR PIN SETTING MECHANISM

Two $1\frac{1}{2}''$ Corner Brackets 73 are bolted to the side-plates of the motor, one hole from the starting lever, and on the inside a $1'' \times 1''$ Angle Bracket 74 is fastened by the same bolts. On a 3" Rod 75 secure two Cranks 76 and 77. A Threaded Pin is attached to the Crank 76 which is placed between two $\frac{1}{2}''$ Pulley Wheels with boss 78 secured to a 3" Rod 79. On the end of Rod 79 is a $\frac{3}{4}''$ Sprocket Wheel 80, and a $\frac{3}{4}''$ Contrate Wheel 81. The Sprocket Wheels 70 and 80 should then be connected by Chain. The Collar 82, loosely attached to the Crank 77 by a nut and bolt, is fastened to a 2" Rod that is extended with two $11\frac{1}{2}''$ Rods 83. Place two Compression Springs and a 1" Pulley 84 on the end of the Rod. By pressing the 1" Pulley in, the Contrate Wheel engages with the Pinion 42.

DRIVE FOR PIN CLEARING MECHANISM

Place on 3" Rod 85 a $\frac{3}{4}''$ Sprocket Wheel 86 and a 50-tooth Gear Wheel 87, and on a similar Rod 88 (journalled in the Double Angle Strip 51 and the Flat Plate 38), secure a 50-tooth Gear Wheel 89 and a Single Throw Eccentric 90 the Rods being held in position by Collars. An 8" Rod 91, carrying a Triple Throw Eccentric 93 and a $\frac{3}{4}''$ Sprocket Wheel 92, is placed in the Corner Gussets and driven by a chain from the Sprocket Wheel 86. The arm of the Eccentric 90 is extended by a $4\frac{1}{2}''$ Strip and lock-nutted to the Crank 94 secured to an 8" Rod 95. Two Cranks 96, fastened to the Rod 95, are extended by a $4\frac{1}{2}''$ and a $1\frac{1}{2}''$ Strip 97 and 98, and a $3\frac{1}{2}''$ Strip 99 is lock-nutted to the end of the Strip 97. Next bolt two $\frac{1}{2}''$ Reversed Angle Brackets 100 together, and lock-nut one lug to the end of the Strip 98, the other lug is bolted to the $3\frac{1}{2}''$ Strip 101. Connect the $3\frac{1}{2}''$ Strips by a $3\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip 102, to which has been bolted two $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Transparent Plastic Plates overlapped three holes. The Triple Throw Eccentric 93 has its arm extended by a $5\frac{1}{2}''$ and $1\frac{1}{2}''$ Strip 103 which is lock-nutted in the centre hole of the Strip 99. To bring the "remover" down, the Pinion 46 is engaged, and to move it backwards the Pinion 48 is engaged. A stop (for balls which are thrown too hard) is made by bolting a Flat Girder to a $4\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip 104 attached to the frame. $\frac{7}{8}''$ diam. balls are required.

Parts required to build the Bowling Alley: 2 of No. 1; 8 of No. 1b; 7 of No. 2; 8 of No. 2a; 4 of No. 3; 1 of No. 4; 1 of No. 5; 5 of No. 6a; 7 of No. 7; 3 of No. 7a; 2 of No. 8; 5 of No. 8b; 3 of No. 9; 2 of No. 9a; 2 of No. 10; 1 of No. 11a; 16 of No. 12; 1 of No. 12a; 2 of No. 12b; 2 of No. 12c; 4 of No. 13; 3 of No. 13a; 3 of No. 14; 5 of No. 16; 5 of No. 16a; 5 of No. 16b; 1 of No. 17; 6 of No. 18a; 1 of No. 18b; 5 of No. 22; 7 of No. 23a; 1 of No. 25; 1 of No. 25a; 2 of No. 27; 4 of No. 27a; 1 of No. 27d; 4 of No. 26; 1 of No. 26b; 1 of No. 26c; 1 of No. 28; 192 of No. 37a; 173 of No. 37b; 46 of No. 38; 4 of No. 48; 3 of No. 48a; 1 of No. 48b; 2 of No. 48c; 1 of No. 52a; 1 of No. 53a; 32 of No. 59; 6 of No. 62; 8 of No. 63; 1 of No. 63c; 1 of No. 70; 3 of No. 72; 2 of No. 73; 1 of No. 80; 1 of No. 82; 89" of No. 94; 2 of No. 95; 5 of No. 96; 3 of No. 96a; 1 of No. 103c; 1 of No. 103g; 4 of No. 108; 1 of No. 109; 1 of No. 111a; 2 of No. 111c; 1 of No. 114; 2 of No. 115; 2 of No. 120b; 2 of No. 125; 1 of No. 130; 1 of No. 130a; 3 of No. 133; 1 of No. 133a; 2 of No. 155; 1 of No. 173a; 1 of No. 179; 1 of No. 190a; 2 of No. 193; 1 of No. 194c; 2 of No. 195; 4 of No. 196; 2 of No. 197; 2 of No. 214; 1 E15R Motor; 1 or more Large Marbles or Ball Bearings about $\frac{7}{8}''$ diameter.

So now, you builders and Club members, what about attempting this model? It is quite a challenge but should provide lots of good fun once it has been put together.

WITH THE SECRETARY

Club and Branch News

CLUB NOTES

SHEBBEAR COLLEGE (BEAWORTHY) M.C.—A motor-driven tipping lorry with differential gear has been built by the Secretary. In general, however, model-building activity has been centred on the construction of a large hammerhead crane with a 5-foot long swivelling jib. *Secretary:* M. R. J. Kent, Shebbear College, Beaworthy, N. Devon.

NEW ZEALAND

ST. JOHN'S (ROSLYN) M.C.—A very successful "Simplicity" model-building competition in which each member taking part was limited to 20 Meccano Parts resulted in R. McLean winning first place and R. Mercier second and third places. The models were judged by Mr. King, an adult member with a sound knowledge of Meccano. The next model-building competition will be an "Originality" one. At another meeting, models ranging from roundabouts to cranes were judged and marked. *Secretary:* M. J. Salinger, 8 Maheno Street, Dunottar, Dunedin, New Zealand.

NORTHERN NIGERIA

GINDIRI BOYS' SECONDARY SCHOOL M.C.—This year the Club has fourteen members, who are divided into four groups. Three groups are engaged in Meccano model-building and the fourth one in Hornby Railway operations. At the end of each month the groups change round, so that each gets a spell of model railway working every four months.

Models completed during last term included a platform weighing machine, hammerhead crane, pithead gear, and lifting bridge. Now that the members are proficient enough to be able to tackle almost any Outfit model, they have embarked on the construction of a huge penny-in-the-slot theatre, which it is hoped to complete in time for the Club exhibition on Gindiri Open Day. *Leader:* Mr. P. F. Bradford, Sudan United Mission, Gindiri, P.O. Barakin Ladi, Via Jos, N. Nigeria.

CHRISTMAS GREETINGS

It is again my pleasure to wish every member of the Meccano Guild and the Hornby Railway Company a very happy Christmas. Most Clubs and Branches celebrate this jolly occasion with a grand Christmas Party to which parents and friends are invited and which serves also to conclude the first of the two winter sessions. With always a feast of good things to eat, and lots of fun and games, the Christmas Party is the Grand Occasion of the Club or Branch year.

Here at Headquarters our thoughts go out also to those flourishing Meccano Clubs on the other side of the world—in Australia and New Zealand, where it is now mid-summer. There, Christmas is celebrated out-of-doors with picnics and sports, but the same spirit of Christian good-fellowship prevails. Nor do we forget that happy Meccano Club "in between"—the Cape Peninsula M.C. of Cape Town, South Africa.

A Happy Christmas to you all!

BRANCH NEWS

NORTH END (PORTSMOUTH)—Work on Mr. Enfield's new layout is progressing excellently, and it is hoped to commence construction of the fourth section shortly, with a view to having the layout complete in its entirety by early next summer. The Summer Fair realised just over £4. As mentioned last month, the Christmas Bazaar is now open—on Monday, Tuesday and Wednesday evenings from 7 to 9 o'clock. Admission: adults 6d.; children 3d. A leaflet is being prepared setting out the achievements and aims of the Club and Branch. It will be distributed to Meccano dealers, other local business people, etc. *Secretary:* Mr. A. J. Nicholson, 213 Sultan Road, Buckland, Portsmouth.

CHRISTMAS DISPLAY AT KIDDERMINSTER

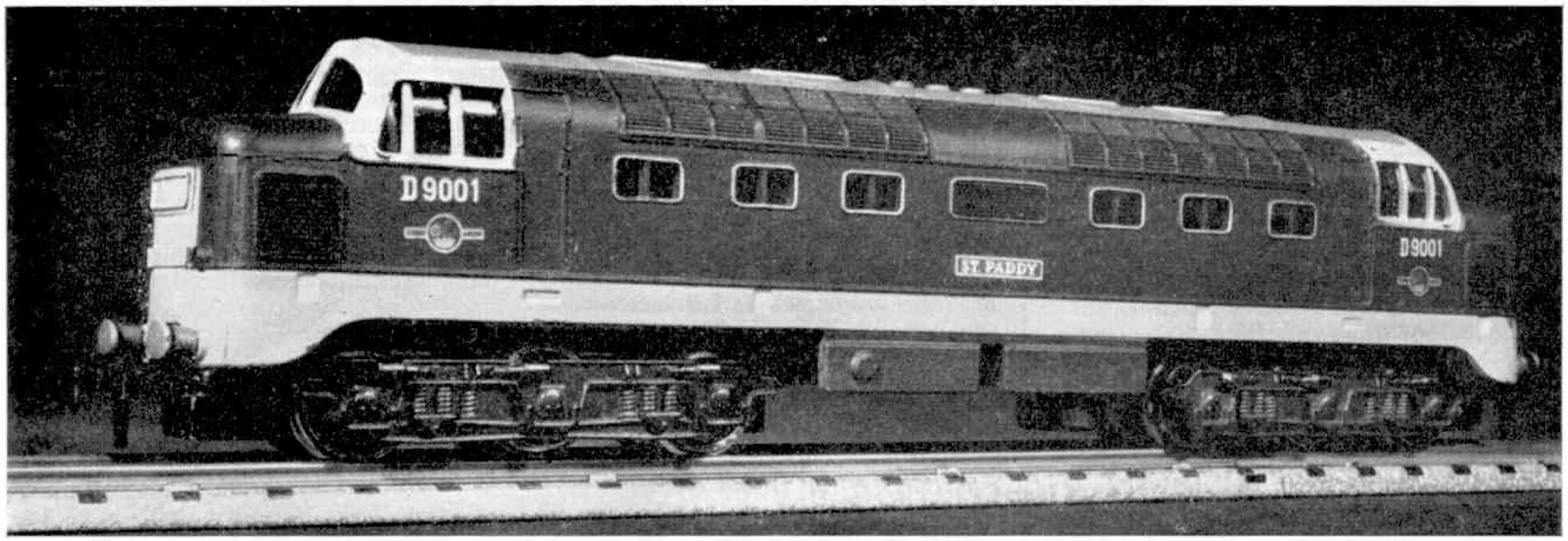
The Kidderminster Model Railway Club, which is incorporated in the Hornby Railway Company as Branch No. 560, will be staging its eighth Christmas Display in the Clubroom, "Railway House", 14a Worcester Street, from Monday December 3 to Saturday December 8, 1962. Hours of opening: Monday–Friday evenings, 6.30–8.45; Saturday, 10 a.m. to 9 p.m. No charge for admission, but there will be a retiring silver collection.

One of the highlights of the Display will be the massive four-level Hornby Gauge "0" layout, which requires 26 members to operate and which will demonstrate to visitors that the days of Gauge "0" clockwork systems are far from over. Another notable exhibit will be the recently enenlarged Gauge "00" two-level electric system.

H.R.C. members from other Branches will be specially welcome.

Four enthusiastic Meccano model-builders at the St. Annes Y.M.C.A. M.C. Left to right, they are: Paul Strangeways, Brian Teakle, Andrew Dickman and Philip Spencer Coups. At the extreme right the Leader, Mr. Strangeways, gives a spot of advice.

YEAR'S PROGRESS IN HORNBY-DUBLO



NEW INTRODUCTIONS WIDEN VARIETY IN TRAIN WORKING

HORNBY RAILWAY COMPANY

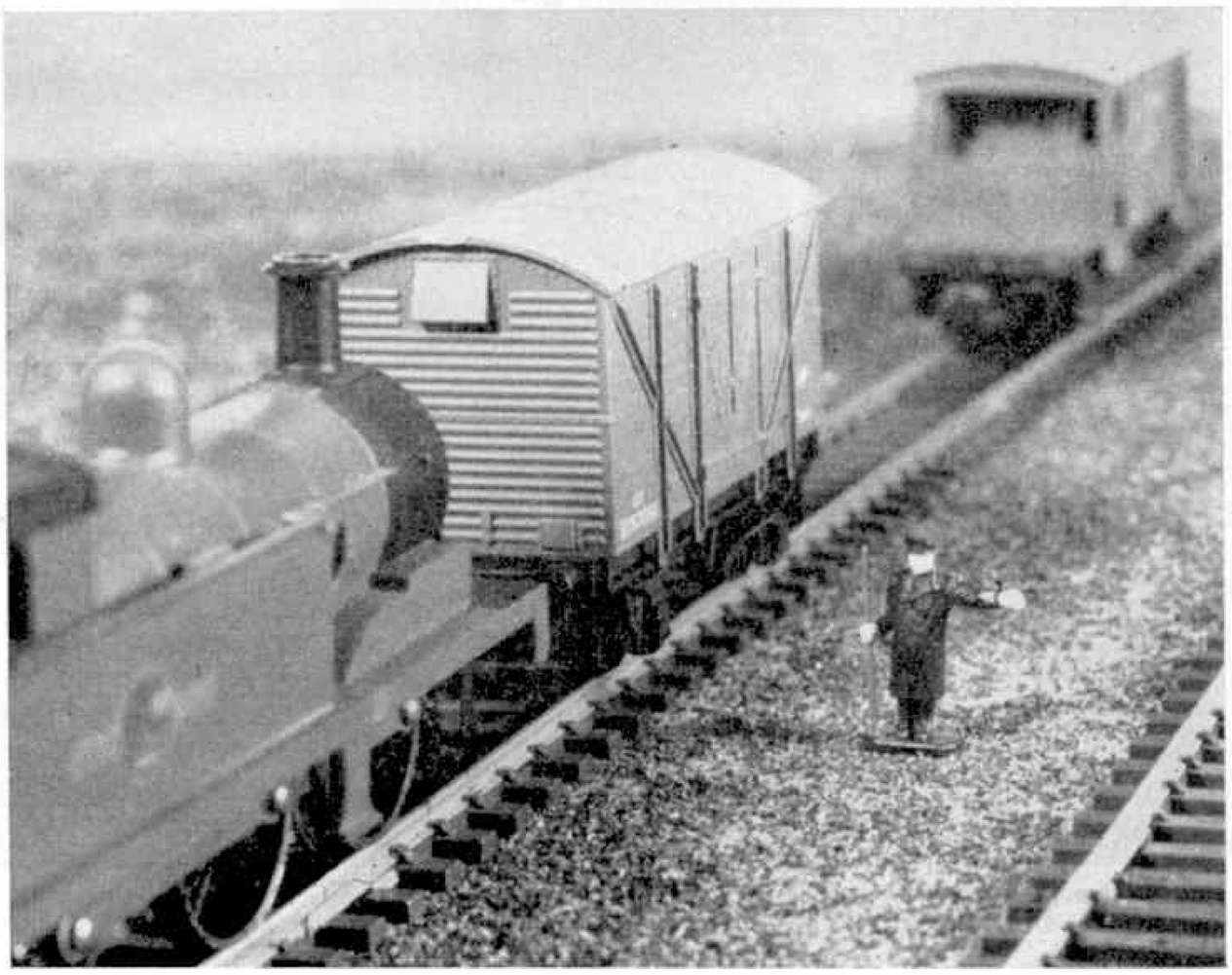
By The Secretary

I AM sure that all of you will be interested to see the very fine picture of the Hornby-Dublo Three-Rail Deltic Diesel Locomotive *St. Paddy* reproduced above. This has been supplied by the English Electric Company Ltd., who, as most of you will know, are the builders of the real Deltics. Indeed, this company have throughout taken the greatest interest in our Hornby-Dublo reproductions and have assisted in valuable measure with drawings and information. I think the picture bears out remarkably well what a fine subject for a photograph the Deltic Diesel really is. The appearance of the Deltic Diesel in the authentic colours used for the real Type 5s has been one of the locomotive events in Hornby-Dublo during 1962, and you will recall that in the July issue of the *M.M.* our talk dealt with this matter in some detail.

There is little doubt that Deltic Diesels have become well established in the motive power depots of many Hornby-Dublo layouts, for many of these engines, either in Two-Rail or in Three-Rail form, are in service, and I know from your letters that some very good loads are being hauled regularly. Important long-distance passenger and freight trains in miniature can be Deltic-hauled efficiently.

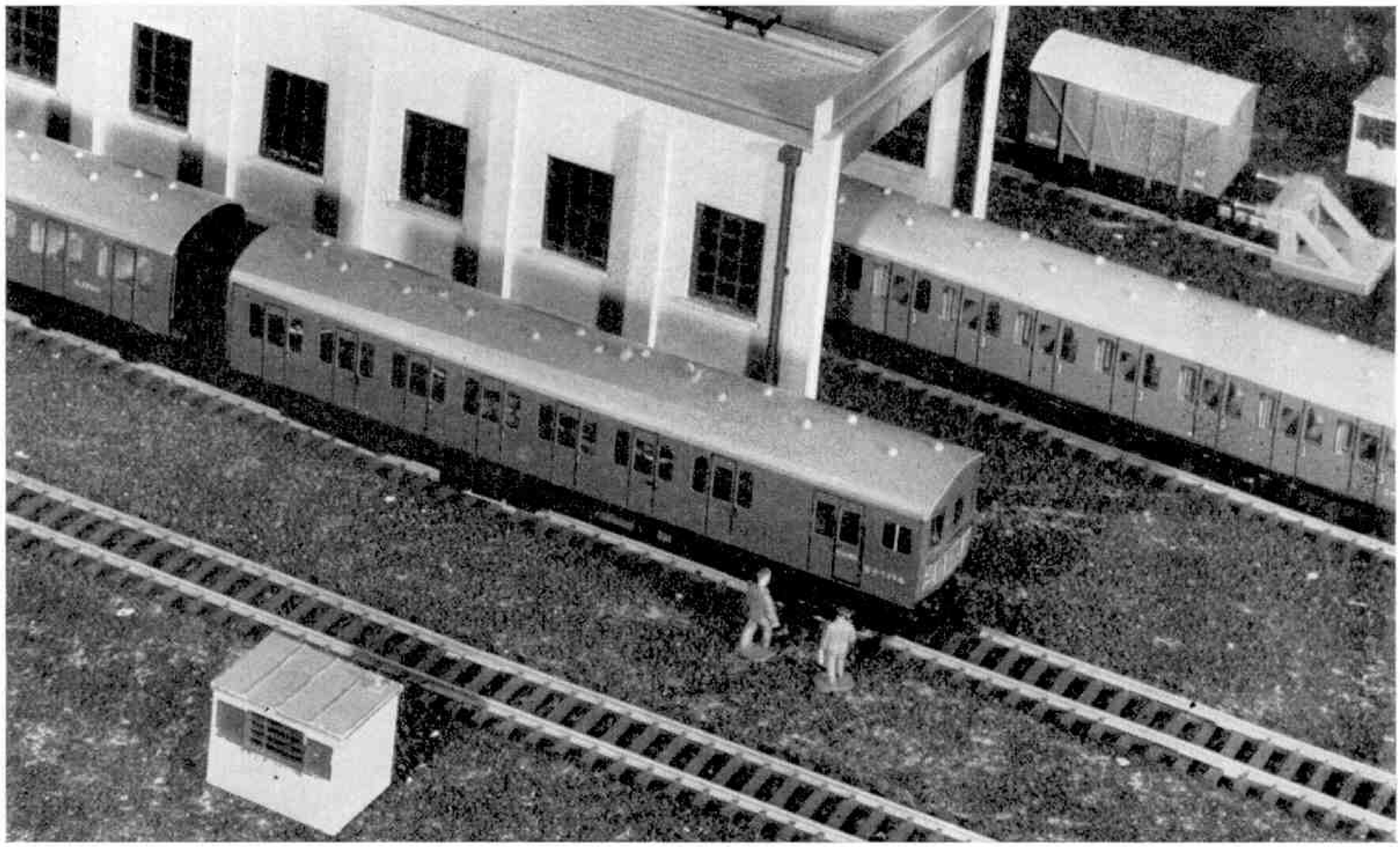
Fine Set to start with

Reference to diesel-hauled freights reminds me of the introduction during this year of a new Train Set of this kind into Hornby-Dublo. This came about through the inclusion of the Co–Bo Diesel Locomotive, previously available separately for some time, in a Train Set listed as No. 2033. If one favours diesel motive power, and quite a number of younger enthusiasts do nowadays, this makes a fine Train Set to start off with. The standard assembly of freight vehicles included in the Set can very well form the nucleus of an imposing representation of one of the many diesel-hauled freight fliers that provide rapid overnight transits between many important centres on the busy B.R. main line network. From the locomotive point of view, the wheel arrangement of the Co–Bo Diesel is unusual, while the housing outline provides a diesel "shape" different



The Goods Shunter, recently included in the Railway Personnel Dinky Toys No. 050, poses, "coupling stick" in hand, for his photograph in the shunting yard on a Hornby-Dublo Two-Rail layout.

The striking study at the top of the page of "St. Paddy", the Three-Rail Hornby-Dublo Co–Co Deltic Diesel Locomotive, was provided by the English Electric Company Ltd., builders of the real Deltics.



Hornby-Dublo Suburban Electrics are seen here "at home", while miniature railwaymen attend to the Motor Brake-Second in the foreground. The building is actually an engine shed assembled from the standard Kit No. 5005 and used here to represent an electric car depot.

from that of the other Diesels in the range.

Yet another form of railway motive power is now represented in the Hornby-Dublo range in the shape of the Suburban Electric Train that formed the subject of our talk in October last. This represents a standard multiple-unit electric, a type of train now familiar on many electrified routes. A last-minute development in production, of which I was not able to give you details at the time of our earlier talk, is that the striking oblong patch of yellow paint officially known as a visual warning indication is incorporated in the finish of the ends of the Electric Motor Coach and the Driving Trailer. This arresting yellow rectangle is being applied to real diesel locomotives, as well as multiple-unit trains, both diesel and electric. It shows up well in the miniature car shed scene that was staged specially to provide the picture at the head of this page.

Although they lead a very busy life, particularly during suburban rush-hour periods, real multiple-unit electrics do have their periods of standing by, while, of course, they have to be prepared and serviced regularly in order to keep the wheels rolling. For peak-period traffic the two Brake-second vehicles included in the Train Set, one representing an electric motor coach and the other a corresponding driving trailer, can be supplemented by one, or possibly two, of the new-style Suburban Coaches described in some detail in my notes last April. The No. 4081 Second class Coach in S.R. green will fit in very well as an intermediate vehicle between the two Brake-seconds. You may, of course, operate a three- or four-car train as a regular thing, but if you like altering the composition of your trains from time to time during a running session, it is easy enough to do so with your Suburban Electrics.

Companion vehicles to the No. 4081 Suburban Coach just referred to are the corresponding Brake-second listed as No. 4082, also in S.R. green, and the Nos. 4083 and 4084 First-second and Brake-second respectively in standard maroon livery. These are very fine representations of compartment type rolling stock such as you may find on suburban and what we may term residential services. Some of the last-named travel fairly long distances, in some cases nowadays with diesel haulage. The Co–Bo or the Bo–Bo Diesel Locomotive may appeal to you for this type of work, but if not, there is always the well-tried 2–6–4 Tank Locomotive.

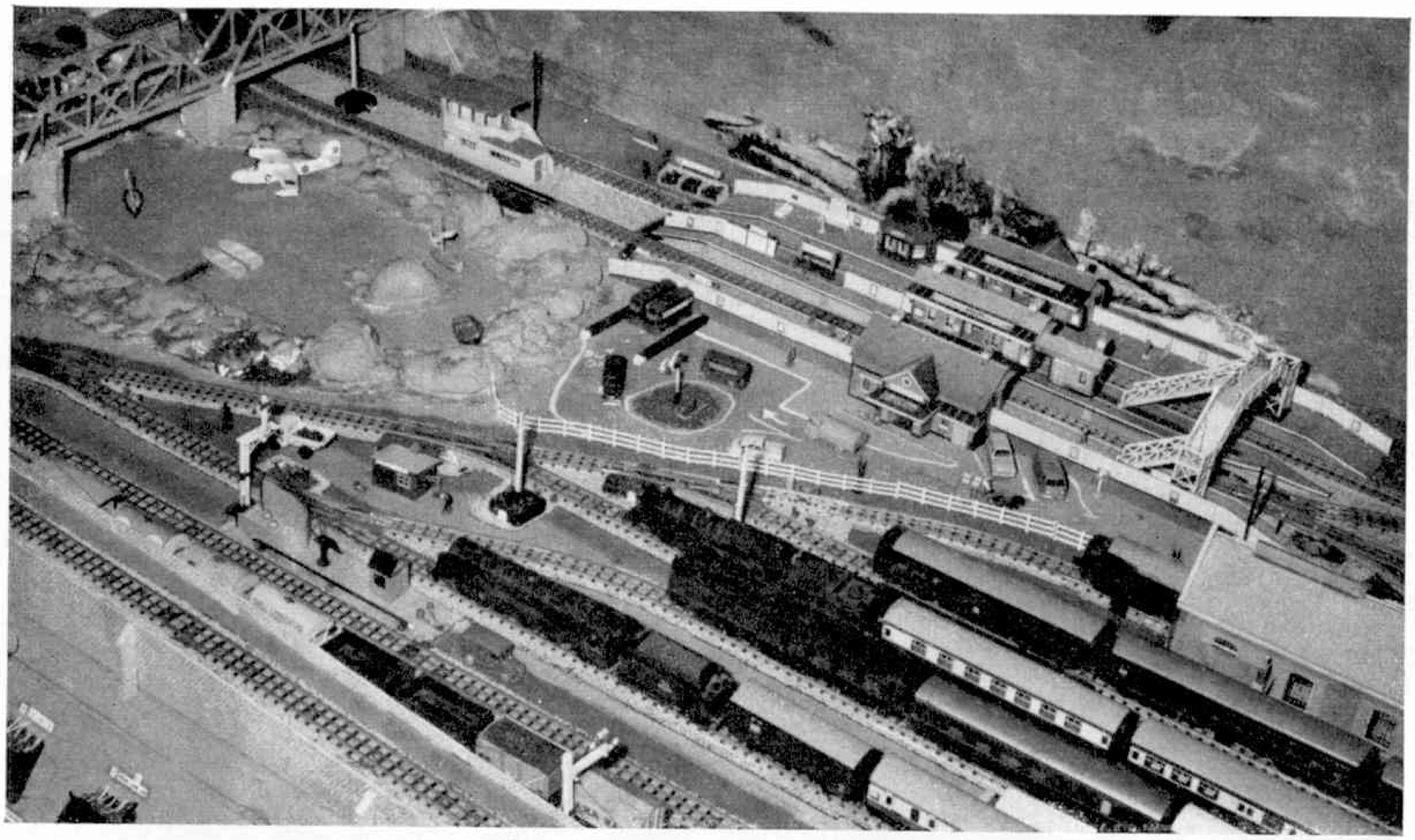
Meet the Shunter

In the small picture at the foot of the previous page, we welcome a "new boy" in the range of Hornby-Dublo miniature figures. This is the Shunter, who now makes his appearance in the Set No. 050, taking the place of one of the two Railway Policemen originally included in the selection of twelve figures. The Shunter has his left arm outstretched, as if signalling to the driver of the shunting engine. In his right hand he grasps what he would call a "coupling stick," which is the railwayman's name for a shunter's pole. This is a stout staff of wood, with a metal end formed into a hook to enable the shunter to lift the coupling link of one wagon on to the hook of the next without having to go between the buffers. The latter operation, as you can imagine, can be a somewhat hazardous business, particularly in the dark, or in rough weather conditions. The Shunter is dressed for the weather, in a long garment that may be taken for a greatcoat, or railway "Mac". On his head he wears the regulation uniform cap.

Should be in Evidence

With the wide variety of freight rolling stock now being available in Hornby-Dublo, our miniature Shunter will find plenty to do to keep him busy. As you are fully aware, he does not really have to couple up Hornby-Dublo vehicles, or uncouple them, as the automatic couplings look after this sort of thing, and are, of course, particularly effective when an Uncoupling Rail is used. But several miniature figures, including the new Shunter, should certainly be in evidence on the ground in your shunting yard, just as if they were really on the job.

You will not need reminding of the adaptation of the standard 12-ton Ventilated Van in special red finish as a Packing Van, listed as No. 4318. This has made possible the assembly of a splendidly realistic Breakdown Train Set. The Set incorporates the popular Breakdown Crane, with relieving bogies and Match Truck, the Packing Van and a Brake-second Suburban Coach of the older type to represent a riding van for the crew. The engine in this Set is the long-familiar 0–6–2 Tank. There are no Rails in this Set, the idea being that it is added to an existing layout.



Railway In A Loft

By

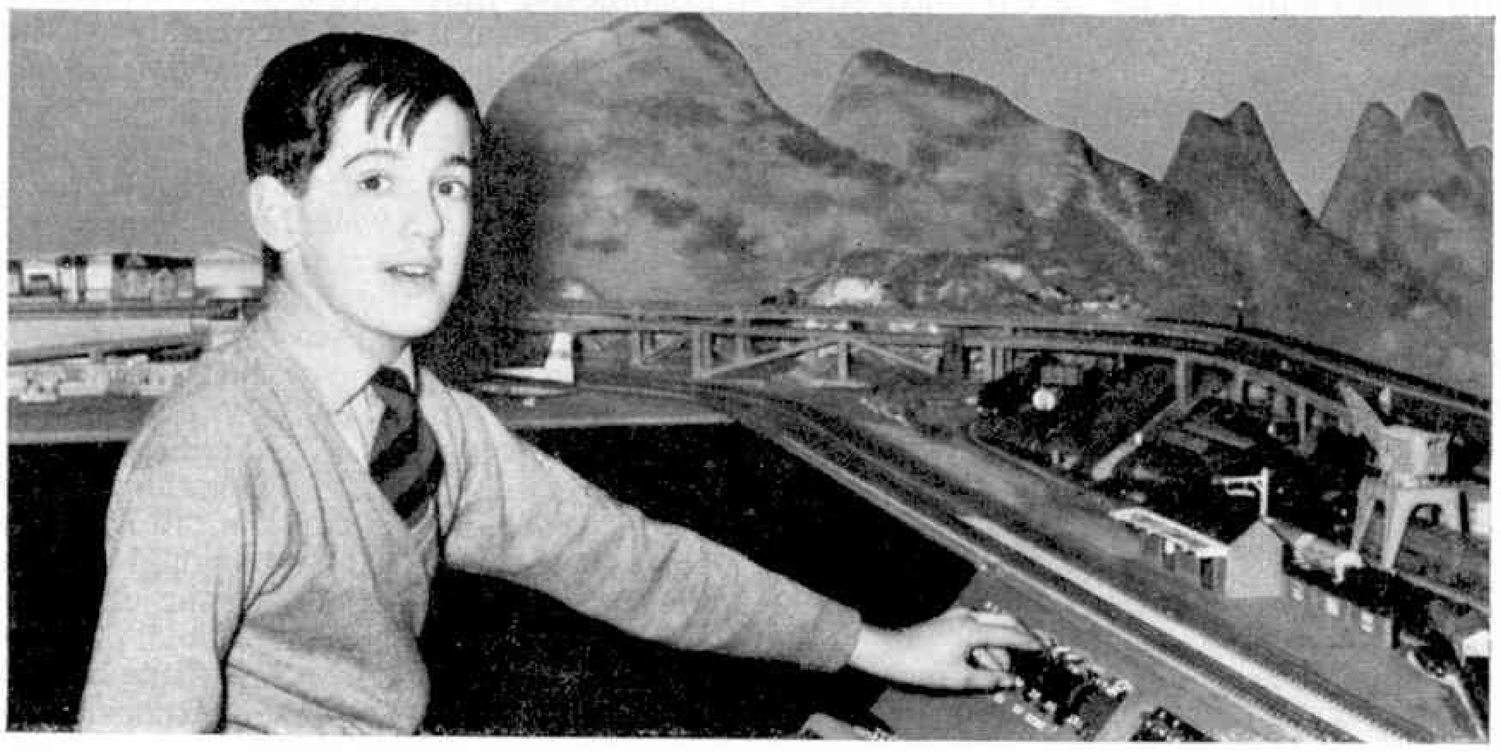
"LAYOUT MAN"

THE notes describing the Hornby-Dublo Three-Rail layout shown in the pictures on this and the following page are written in the past tense because, at the time they were compiled by the owner of the railway, Gordon Bramley, now of Nottingham, he was preparing to dismantle the layout in view of an impending house removal. The details, therefore, refer to the layout as it used to be at Gordon's previous home in Wallasey, Cheshire.

At the time of writing I have not heard how the railway is making out in its new situation. The resettlement of a permanent railway of such scope is bound to involve a number of problems, so that it may be some time before there is any further news. Perhaps revision of the layout will call for a further set of photographs, and another description in these pages; we will have to wait and see.

The railway was originally situated in a bedroom, but its rapid extension made necessary its removal to the loft space which was specially prepared to provide a convenient enclosure for it. The generous area afforded made an extensive system possible and a good idea of its scope may be gathered from our photographs.

The layout as a whole could be regarded as U-shaped, the space between the two straight sides of the U leaving plenty of room for the operator to manage the numerous switches and other items mounted on panels projecting from the baseboard, one on each side. One control panel dealt with passenger train movements throughout, while the other was devoted to freight train operation, the panels being placed adjacent to the tracks devoted mainly to these respective operations.



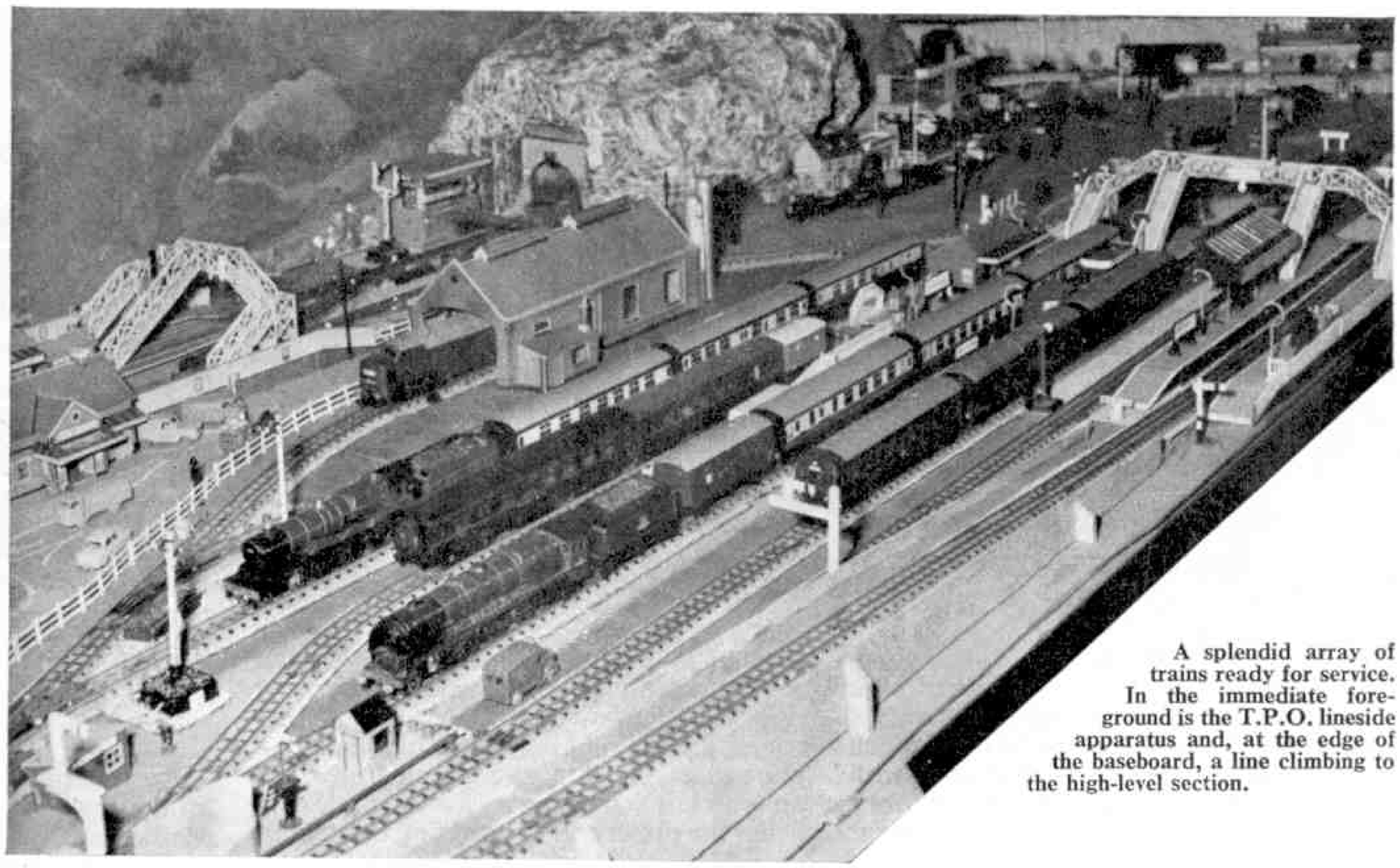
Top: A busy scene on the layout which Gordon Bramley, now of Nottingham, operated until recently at Wallasey. There is an impressive display of trains and motive power in the foreground, while the lake, and the girder bridge beyond, add to the effectiveness of the scene. Right: Here you see Gordon, proud owner of the railway, busy at the control panel.

High-level section

Although I have described the layout as being U-shaped, the main running tracks followed broadly the outline of the baseboard to provide for continuous running necessary to simulate long journeys. In view of the space available, it was not difficult to incorporate two levels, and a considerable "mileage" of the track formed a high-level section, with connections to the baseboard tracks at each side of the U.

The engineering features involved did not remain at simply the provision of a high-level circuit, for tunnel entrances, six all told, led both elevated and baseboard level tracks through the partition walls at each side of the layout, the walls themselves being painted to represent scenic features appropriate to the situation.

Trains were, therefore, carried out of sight for considerable distances and this, together with the actual layout design, made watching the trains a most fascinating business for visitors and, I am sure, for the owner and operator, too. Actually I should have said operators, as I gather that the full-scale working of the layout, involving five trains in motion at one time, needed the attention of four people, although three well-practised specialists in train movements, with good knowledge of the layout and controls, could carry on a very fine programme of operation without mishap.



A splendid array of trains ready for service. In the immediate foreground is the T.P.O. lineside apparatus and, at the edge of the baseboard, a line climbing to the high-level section.

Seven years were occupied in the development of the railway as it stood when photographed, and for three of these the railway was situated in the loft. Needless to say, an amply stout baseboard was provided, with cork underlay helping to provide the track with a smooth foundation and one that was conducive to noise reduction. The latter consideration is of special importance where miniature railways are operated over the normal living space in a house.

The permanent nature of the railway provided plenty of scope for lineside and scenic developments, as is evident from the pictures. Specially interesting lineside features included the miniature lake, seen in our first picture with a two-span girder bridge at the back of it. This bridge carried one section of the high-level track and made an effective engineering and scenic contribution to the whole.

In the space at the base of the U, between the main passenger and goods sections, was a miniature aerodrome, complete with suitable aircraft. No doubt the presence of the airfield stimulated the running of local connecting trains for passengers by air services, while a more industrial lineside concern in the shape of a miniature oil refinery must have added to the variety of traffic dealt with by the freight section.

In addition to the through running and interconnecting tracks, there was a there-and-back reverse loop, so it was possibly not convenient—and, in any case, not really necessary—to incorporate a turntable.

There was ample provision of sidings not only for the storage of stock and completely made-up trains ready for action, but also for the sorting and marshalling of vehicles. Naturally, there were private sidings connected with the refinery, and these were separate from the sidings concerned with more general freight.

The mountain scenery and the high-level lines entering the tunnels provide a splendid background to the wide sweep of the baseboard-level tracks in one corner of the layout.

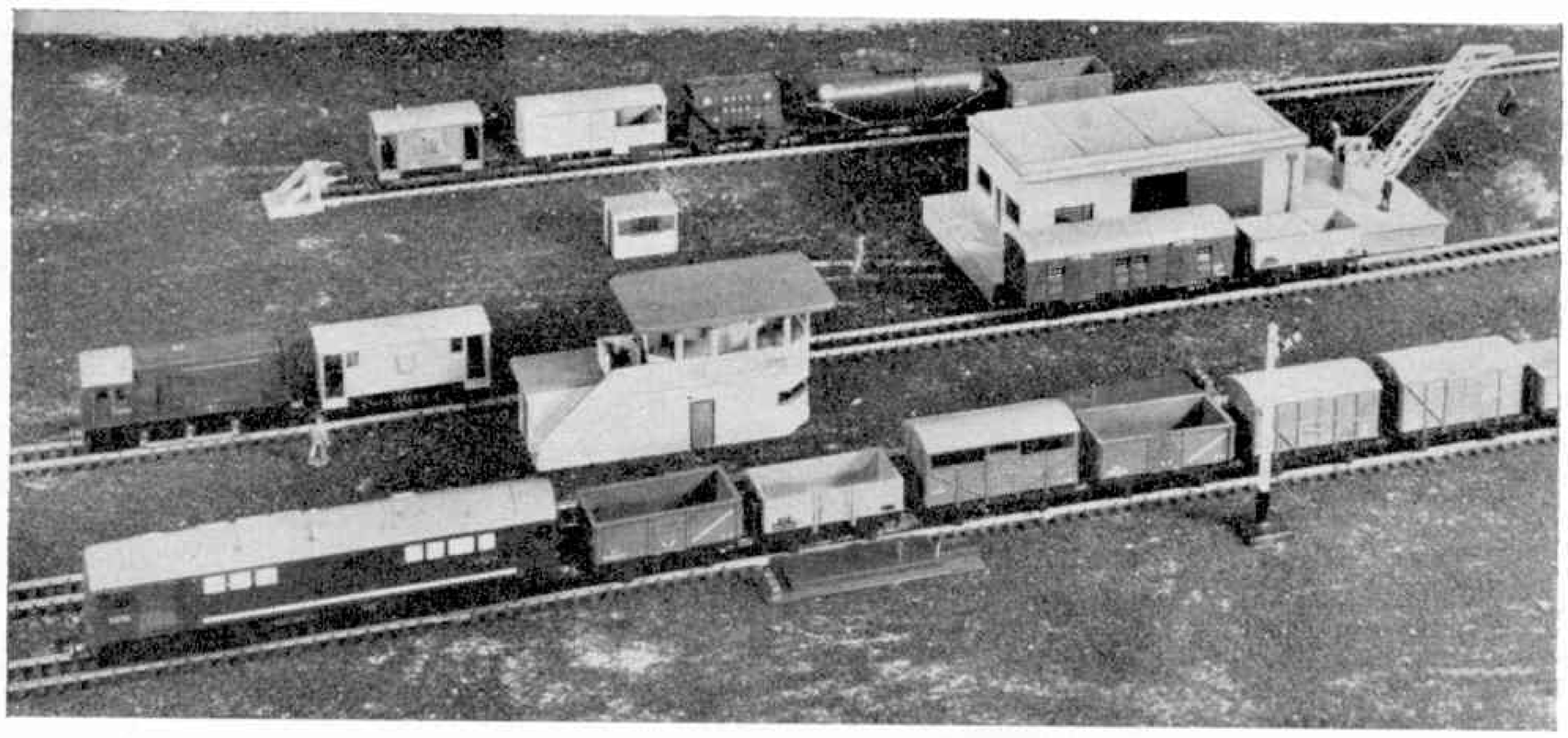
Steam and diesels

Vehicles for freight traffic totalled 65 in all, while there were fourteen coaches for the different kinds of passenger trains included in the running arrangements, and sixteen locomotives. Prominent among these were the Duchess 4–6–2 and Castle 4–6–0 shown in our first picture. In addition to steam power, diesels also were represented. In view of the intention expressed by the owner to include, in the course of further developments in its new situation, an underground section representing the Mersey Line of the L.M.R., it would seem that (*Continued on page 510*)

FOR THE TWO-RAIL ENTHUSIAST

DOUBLE TRACK WITH INNER CIRCLE

By "LINESMAN"

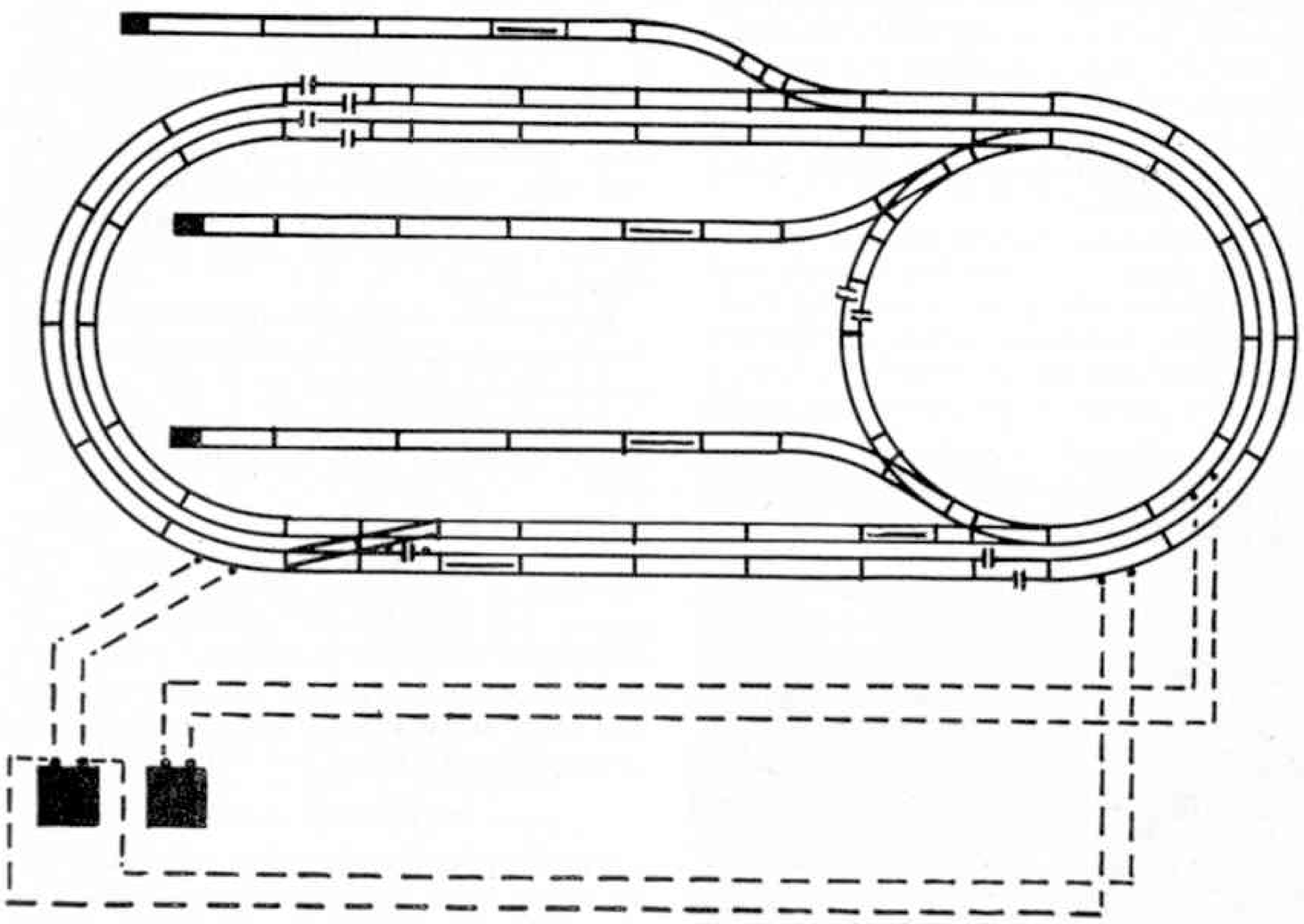


Here, a train of miscellaneous freight stock is on its way down the main line to a marshalling yard, behind a Hornby-Dublo No. 2233 Co-Bo Diesel Locomotive.

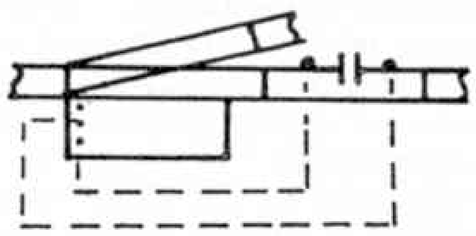
OUR Two-Rail diagram this month shows a layout which consists of a double track oval with the added feature of a circle on the inside, from which two long sidings diverge. This layout, with the two power control units needed to work it, will fit on a baseboard measuring eight feet six inches by four feet.

As usual with our double track schemes, two trains can run simultaneously on this layout, each on its own main track, and each train can be stopped or started at will, and independently, by means of the power control units. The inner track allows a train to leave one of the long sidings and to make any number of trips round the main line, while it can finish its journey at the opposite siding from that on which it started.

On the upper track is a siding branching outside the main line and a Hornby-Dublo Island Platform can be fitted between this siding and the main track. Opposite to it, on the inner track, one can place either another Island Platform or, if desired, a Suburban Station.



BASEBOARD SIZE = 8' 6" X 4'



WIRING OF SINGLE ISOLATING RAIL

An isolating section has been provided on the lower outer main track so that an engine can stand between the Single and Double Isolating Rails while another comes from the inner track via the cross-over, proceeds round the outer main line and backs into the outer siding. The wiring for the Single Isolating Rail is given in the smaller diagram.

The Points on this layout, as well as the Uncoupling Rails, can be Hand-Operated of Electrically-Operated, as the operator desires, but it would be an advantage to have accessories situated remotely from the control centre electrically operated, so that the owner does not have to walk round the layout or lean over it in order to set Points or Uncoupling Rails. Remember that if electrical accessories are included, one of the power units must have an additional output which is suitable for them.

ITEMS REQUIRED

15	Curved Rails	2710
10	Curved Rails, Large Radius ..	2719
1	Curved Terminal Rail with Suppressor	2714
2	Curved Terminal Rails with Suppressor, Large Radius ..	2721
1	Curved Half Rail	2711
5	Curved Quarter Rails	2712
1	Curved Half Double Isolating Rail	2740
25	Straight Rails	2701
3	Straight One-Third Rails ..	2703
8	Straight Two-Third Rails ..	2702
1	Straight Two-Third Single Isolating Rail	2738
3	Straight Two-Third Double Isolating Rails	2739
1	Straight Short Rail	2706
5	Uncoupling Rails	2745
3	Right Hand Switch Points ..	2728
4	Left Hand Switch Points ..	2729
3	Buffer Stops	2450
2	Power Control Units	

Of General Interest

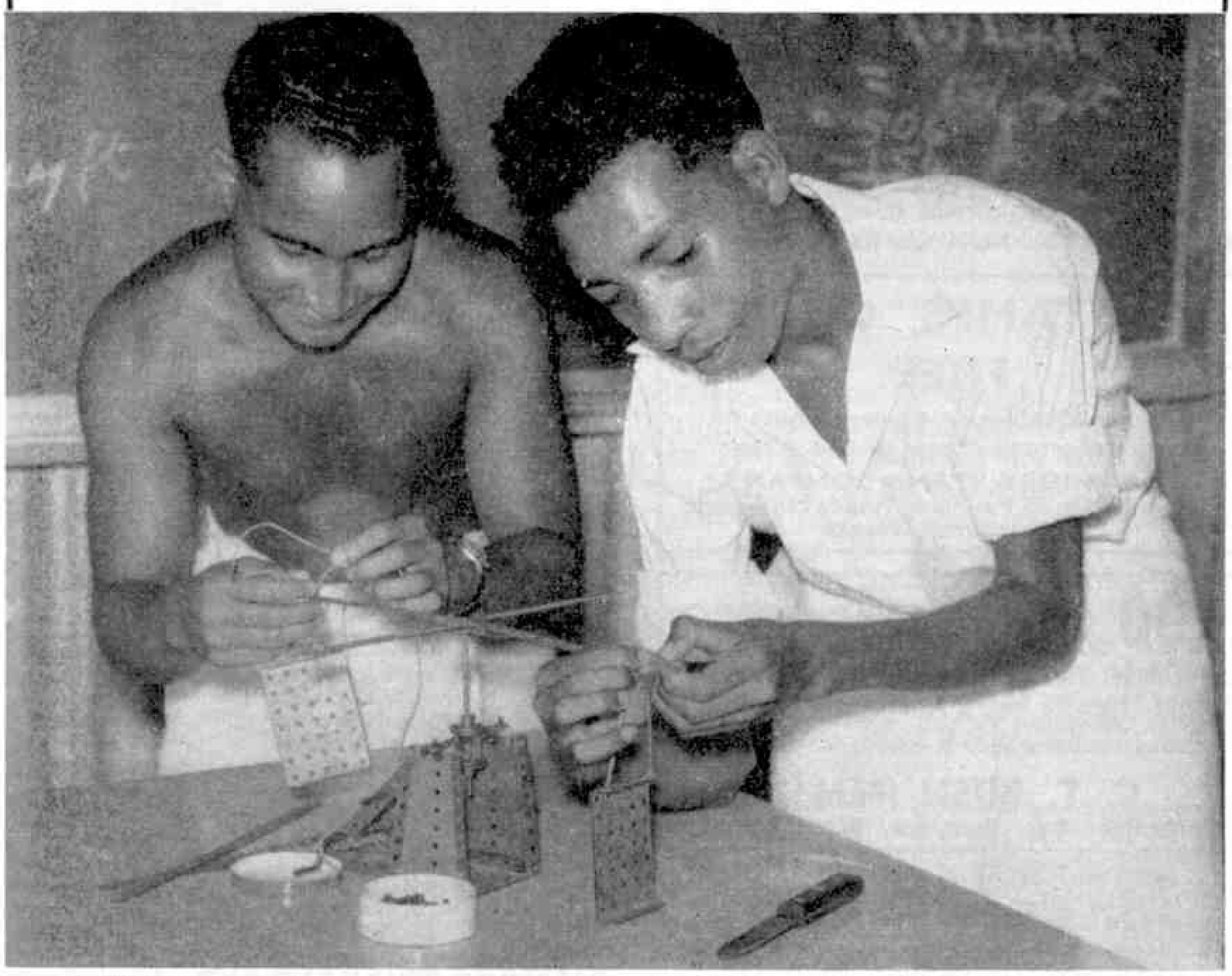
SINCE the introduction of B.R. winter timetables on September 10 last, the *Pines Express*, linking Northern and Midland cities with Bournemouth, has been re-routed via Market Drayton, Birmingham Snow Hill, Oxford and Basingstoke. Saturday, September 8, therefore, saw the last appearance of the train on the Somerset and Dorset line, when both the up and the down services were worked by the last steam locomotive to be built for B.R., No. 92220 *Evening Star*.

M.M. reader Ivo Peters, in forwarding the photograph reproduced here, wrote "When *Evening Star* arrived at Bath she was in a shocking state but the Bath Shed Master, Mr. Harold Morris, who is most pleasant and efficient, soon had cleaners on the job in an endeavour to make the engine more presentable. Unfortunately, the paintwork on the boiler was in very poor condition. However, it was a treat to see the copper-capped chimney and the various other pieces of brass and copper on the locomotive all polished up and shining in the sun.

Two Bournemouth enginemen, Passed Fireman Peter Smith and Fireman Aubrey Punter, with No. 92220 "Evening Star", after working the last up "Pines Express" from Bournemouth over the Somerset and Dorset line.

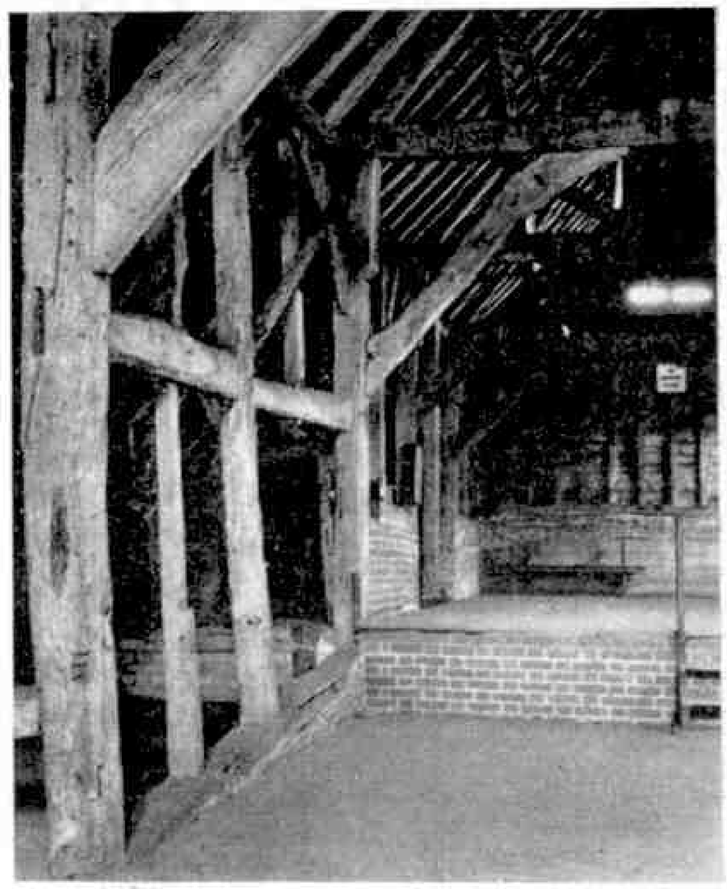
"On the last day that the *Pines* ran over the Somerset and Dorset line both the up and the down trains were taken by *Evening Star* on her own, although in both cases the train was over the maximum load laid down to be taken by a 9F on her own. Actually the load of the up train was 426 tons, believed to be the heaviest unassisted load ever taken over Masbury Summit."

MECCANO AS AN AID TO LEARNING



N. V. Salt, of Torquay, who supplied the picture above, tells the Editor of the "M.M." in a letter, "For the past four and a half years I have been an education officer with the New Guinea Department of Education. I took with me from England a rather ancient but comprehensive Meccano Set and in all my schools found it most useful as a teaching aid, not merely as a means of technical education, but as a means of teaching technical English. It was always in great demand and my pupils derived a great deal of benefit from its use." Mr. Salt's picture shows two of his pupils, Kila Kila and Gamu Rei constructing a Meccano roundabout at an Intermediate School near Port Moresby.

During last summer fire seriously damaged part of the Quaker hostel



immediately next to the famous Mayflower Barn at Old Jordans, near Beaconsfield. Happily the barn itself (pictured above), which is mainly of timber was not harmed. England has many older and larger barns (some more than 600 years old and more than 180 feet long), but this modest Buckinghamshire barn is specially treasured because it is believed to contain timbers formerly in the pilgrim ship Mayflower, *which sailed from England to America in 1620. Americans travel thousands of miles to see the Mayflower Barn.*

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FOR OTHER STAMP ADVERTISEMENTS SEE ALSO PAGE 507

For Stamp Enthusiasts

British Antarctica

By F. E. Metcalfe

FOR a long time Argentina has been claiming the Falkland Islands (Malvinas, they call them) and, coupled with Chile, has also been after some of Antarctica to which we also lay claim. However, there is not likely to be a blow-up between those two South American republics and ourselves, as all countries having "Far South" claims got together recently and very sensibly decided to leave things as they are for the next 30 years.

That was a very good idea. Stamps came into it, too, for it was also decided that no country should issue stamps, or continue using any in Antarctica which showed the flag, etc., of the issuing country. This means changes before very long in the stamps which have been issued to date by Great Britain or our sister countries Australia and New Zealand, which also have claims to territory in that part of the world.

The stamps of the Falkland Islands can hardly be called those of Antarctica, although they are near to that remote part, but the Falkland Island Territories certainly come into the picture. They started off in 1944 by having Falkland Island stamps overprinted for Graham Land, South Georgia, South Orkneys and South Shetlands—Falkland Islands have had their own stamps since 1878 followed, a couple of years later, by a general issue covering the whole of the four dependencies. These stamps show a map of the entire region and, in consequence, are very popular both with collectors of British Commonwealth stamps and with thematic collectors who take geography as a subject.

Before moving on, I would like to say another word or two about these map stamps, because there have been two issues, which differ slightly. The first showed the map with relatively thick lines, and was followed by another printing in which the map has finer lines. There are other slight differences, too, but I think the appearance of the maps themselves are a good guide. If you *do* want to go

further into the matter, the two types are fully illustrated and explained in the Commonwealth KGVI Catalogue.

However, these map stamps are now off sale (but are still quite within the reach of most pockets) having been replaced by a really magnificent set of ship stamps—depicting vessels that have played a part in Antarctic explorations—which, alas, and rather without justification, go up to £1. But a set to 1/– costs only about 5/–, and so fine are the stamps that a really interesting page can be made for this moderate outlay. Don't forget—if you take care to mount the stamps properly and keep them in good condition, you will not be throwing your cash away on mere bits of paper, which I am afraid is what you do when you buy some of the fancy labels that are dubbed as stamps. But we are not at the end of the story yet as far as the Dependencies are concerned, as another set is on the way, and may even have appeared by the time these lines are in print. The new set will be titled "British Antarctica" and is sure to be popular. As for the current "ship" set, I assume these stamps will remain on sale, but things can change overnight, so to be on the safe side you would do better to buy your set now.

I have already mentioned that Australia and New Zealand have fingers in the Antarctica pie, which is only natural, considering their respective positions. Australia, in particular, has issued several Antarctica stamps. In 1954, for instance, a 3½d. value with a most interesting design was issued to mark the Australian National Antarctic Research Expeditions and in 1957 stamps for Australia's Antarctic Territory were issued, the values running from 5d. to 2/3. Again, the designs do the Australian Government Printing Works great credit, particularly the 2/– value, which I am sure nobody could resist. (You will gather that I am a great fan of Australian stamps, designed and printed in Melbourne.) As these stamps can be used in Australia itself used copies are not hard to come by, but now is the time to buy, as I think that the new agreement will mean that some of this set will have to be withdrawn. (I understand, however, that other Antarctica stamps are on the way to replace them.)

To bring this Australian Antarctica stamp record to date I must mention the 5d. stamp, issued on October 18, to commemorate the fiftieth anniversary of

the 1911–14 Australian Antarctic Expedition, the leader of which was Sir Douglas Mawson. The design shows the portrait of Sir Douglas, who was born in Yorkshire in 1882. Going to Australia as a boy, he graduated at Sydney University, and started his explorations in 1904 in the New Hebrides, an island with a very different climate from that of Antarctica, where he was later to do such fine work.

His first visit down south was as a physicist with the 1907–9 expedition of Sir Ernest Shackleton, and it was during that expedition that he made the first ascent of Mount Erebus, the active volcano towering over 13,000 feet high. Lots more could be said about this famous explorer, but I think that I have written enough to show what an interesting stamp is this 5d. "Mawson"; and best of all, a copy mint or used only costs a copper or two.

And so we come to the end of my notes on philatelic Antarctica, except for mentioning that New Zealand issued a nice little set of four values (3d., 4d., 8d. and 1/6) for use in their Ross Dependency. The three lower values (the top bears a portrait of the Queen) could not have more beautiful designs for those interested in Antarctica, as apart from the 4d. and 8d. values, depicting maps of the region, the 3d. shows a fine illustration of H.M.S. *Erebus* in which Sir James Clark Ross discovered Ross Dependency in 1841. Well, who's for a nice little sideline collection of British Antarctica? It would not be a big one, but if covers are included it could prove of intense interest.

Just one point about the Antarctica stamps issued by Australia—they can be used there for postage, and very often are, so if you want the real thing used, make sure that the postmarks are the right thing. Of course, it is in order to include in your collection these "Aussies" but stamps *really* used in Antarctica are much nicer and, of course, scarcer, with covers best of all.

Stamp Gossip

Bhutan

A COUPLE of readers have written to me about some new stamps which have come their way, apparently from the Northern State of Bhutan. Both correspondents wanted to know something about the country itself, as well as the

stamps, and I am sure they will be interested in the following facts.

Bhutan is a small border country in the Eastern Himalayas (I wish people would make up their minds how we should pronounce that name, whether the stress is on the first or the second syllable, for it makes such a difference to the sound. Incidentally, Hungarians are never likely to be troubled in that way, as in their language the stress is always on the first syllable in all words containing more than one).

It covers an area of about 20,000 square miles and, bordering on Tibet, is extremely mountainous and cold. Rain is abundant. Considering the situation, a surprising percentage of the country is under cultivation. The Bhutans are Buddists, and are an intelligent and hard-working people.

About all the new Bhutan stamps which are appearing just now, may I pass on a word of caution—until we know more about them, one of the stamp trade papers has suggested that we would be well advised to await further news about their bona-fides. Meanwhile, the stamps themselves are attractive enough, as can be seen from the illustration of one of them given here. I understand they are being printed in England.

BEHIND THE IRON CURTAIN

Here in Britain, as in most other countries, we can collect such stamps as we please (I believe that in the U.S.A. the importation of Chinese stamps is forbidden), but behind the Iron Curtain there are apparently one or two rather peculiar restrictions in force. For instance, it is said that in East Germany collectors must contribute 40 commemoratives, and two kilos of definitive stamps to the State Export Organisation every year, and that of all East German commemorative issues only two can be bought, one of which must be donated to the same body for export.

THE GREAT SIEGE

Malta has been in the news a great deal lately, for one reason or another, and stamp collectors have had their own little share in the discussions, as, on September 7 last, this "George Cross" island issued a set of four

stamps to commemorate what is known as the Great Siege. And, my word, how collectors did buy those stamps! So perhaps a word or two about the background to the issue might not be out of place, for they do mark a great event—although what connection the date of issue of the stamps has with the Great Siege itself I do not know, as it actually took place in 1565. On May 18 of that year the Turkish fleet of 153 war galleys and many supporting ships carrying supplies appeared off Malta. Now Islam, which had already wiped out the Byzantine Empire and Christianity, was being pushed further west and had Malta been captured the road to Rome would have been wide open. But although there was only a mere handful of men to hold Malta the Turks, after losing some 20,000 men by September, had cleared off, and it only remained for the Battle of Lepanto, in 1571, to put paid to their Western advance. As is usual with Maltese stamps, the designs of this "Siege" issue are delightful, and with sets cheap enough it is no wonder they are best sellers.

RADIO COMMUNICATION

I once lived in Patagonia, and a bit lower down to the east were the Falkland Islands. Now about the last thing I associated with that British possession was radio, for we looked upon the territory as merely a place where they had a lot of sheep and nothing else. But the Falklands (to my surprise, I must admit) issued a set of three stamps on October 5 last to mark the fiftieth anniversary of the establishment of radio communications. It was in 1912 that a telegram was transmitted, via H.M.S. *Active*, lying at Montevideo, sending greetings from the Governor of the Falklands to the King. Later there was a regular transmission to Europe, relayed via various South American stations and H.M. ships at sea. I don't say that the designs of the stamps issued to commemorate this important event are the last word in artistry, but depicting, as they do, early instruments I am sure that many *M.M.* readers will find them interesting. Naturally, thematic collectors are giving the set a warm welcome.

CHRISTMAS STAMPS

When this issue of the *M.M.* appears most of us will be busy getting together all those mislaid addresses so that we can send greeting cards to friends and acquaintances. Quite a few readers will be using Christmas seals on their envelopes to brighten up things a bit more.

Now wouldn't it be nice if our Post Office followed the lead of that ever-

(*Continued in col. 2, next page*)

By E. W. Argyle

Locomotives On Stamps

TO commemorate the centenary of the opening of the first Chilean railway line which joined Copiapo, the capital of the Province of Atacama, to the port of Caldera, the Chilean Post Office issued a pair of stamps, $1 and $10 respectively, in the design shown above. Actually, the line was opened on July 29, 1851, and the stamps bear the dates "1851–1951", but for some reason they were not issued until 1954. They show a very fine portrait of the first locomotive used on the line, a typical 4–4–0 American-built "General" type, now preserved at Copiapo.

Hungary was early in the field in the pioneering of the railway observation car or "rail motor bus" as they called it, and the "ARPAD" shown on the stamp illustrated and built by the Ganz Works, Budapest, in the days of the monarchy, gave Hungarian engineering international repute.

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FOR OTHER STAMP ADVERTISEMENTS SEE ALSO PAGE 504

Stamp Gossip—(*Cont. from previous page*)

increasing number of countries which *do* issue, about now, real Christmas stamps? America has joined the merry band this year, and I suppose that one day we will also follow the lead of Australia, New Zealand, Papua and New Guinea, Cuba, and other countries. In the meantime there will be plenty of Christmas seals which we can use and, by so doing, help some charity or other, instead of providing more profit to the Post Office, which we would certainly do if they ever show the necessary enterprise and provide us with a Christmas issue of our own.

TIP OF THE MONTH

When Ireland releases a special issue it generally consists of a printing of around two millions of each value. Plenty to go round you will say, but that's the point as, contrary to the situation in countries such as France most, if not all, post offices in Ireland get a supply. This means that the stamps get used up and, consequently, many never get into collectors' hands. This is the reason why used top values at least are missing from so many collections. My tip this month is—never miss a nicely-used copy of these stamps, for they are generally scarcer than one would think.

BOOKS THAT WILL APPEAL

Two additions to a highly popular series by the Burke Publishing Company are **The Boys' Book of Cycles and Motor Cycles** (by Ernest F. Carter) and **The Boys' Book of Scotland Yard,** a revised edition produced with official co-operation. Both are priced at 10s. 6d. The former gives a vivid and detailed description of the development of modern machines from the days of Gottlieb Daimler's wooden-wheeled motor cycle of the 'eighties to the powerful motor racing cycles of the present day. The latter relates the history of crime and detection from the days of Scotland Yard's first detective, Thomas De Veil, through the era of the Bow Street Runners and the "Peelers" to the present era in which all manner of scientific aids are used to combat the criminal.

From the same publishers, in Burke's "Pastime Series For Boys" comes **Magic** (10s. 6d.) in which Harry Clarke, Vice-President of the Magic Circle, tells the reader all about the art of conjuring and offers practical instruction to the would-be illusionist. It provides enthralling reading and is certain to make an impact, for a boy could vanish for a whole evening with a book like this!

* * * *

One of the leading authorities on Astronomy is Patrick Moore, F.R.A.S., F.R.S.A., known to millions of people through the B.B.C. television feature *The Sky at Night*. In **The Observer's Book of Astronomy** (Warne, 5/–) he caters both for the beginner in the subject and all who wish to have a good reference book on Astronomy. It is designed to be equally useful to readers in both the northern and southern hemispheres. The author describes the stars visible at each season of the year, and in separate chapters deals with the sun, moon and planets, together with such irregular occurrences as aurorae, comets and shooting stars; and finally space-rocket developments. The illustrations include 14 colour and 50 black-and-white plates.

Specially For Photographers

CATCHING CHRISTMAS FUN WITH FLASH

WINTER is *not* the time to put away your camera. There are very many interesting subjects to photograph at this time of the year and shortage of light is really no problem.

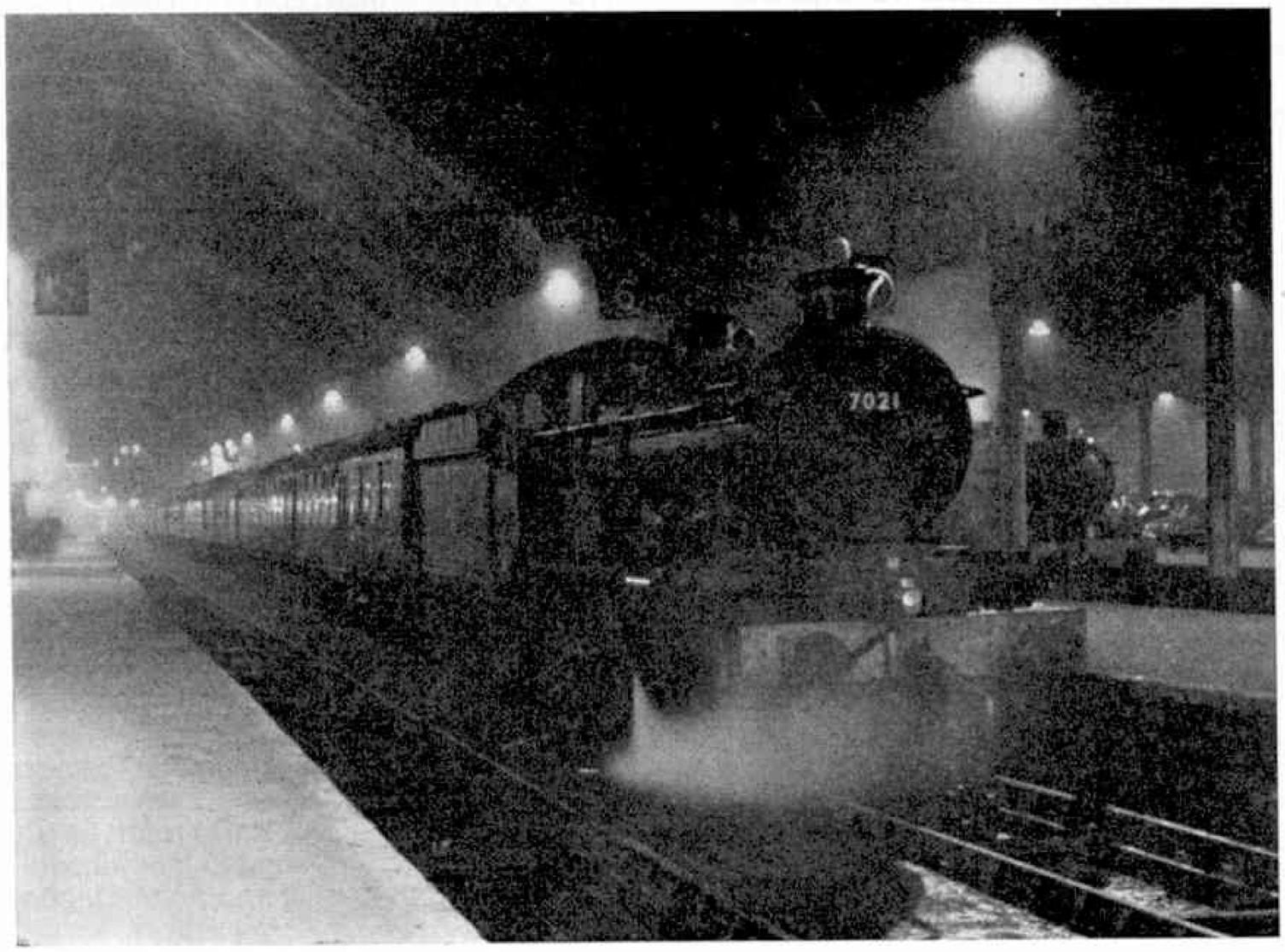
Using flash there is hardly an indoor subject you cannot tackle. Fun at Christmas time is easily caught with flash. Opening presents, snaps of Christmas parties—flash is ideal for these subjects.

By H. G. FORSYTHE

What a thrill there is for people of all ages, especially youngsters like this, in opening Christmas presents. This little chap, having torn the wrappings off, wants to start things moving. Such studies are ideal subjects for flash photography.

Exposure with flash is easy. All you need to know is the Guide Number of the flash bulb for the particular film you are using. To calculate the exposure, just divide this Guide Number by the distance between the bulb and your subject. This will give you the correct aperture to use. For instance, if the Guide Number is 110 and you are 10 feet away from your subject, the aperture you must use is *f* 11 (i.e. 110/10 = 11). If your camera has a fixed aperture, simply divide it into the Guide Number to work out the distance the bulb should be from the subject. (This kind of camera usually has an aperture around *f* 8 or *f* 11.) Details of Guide Numbers, or Flash Factors as they are often called, are given in the instructions included in flash bulb packets. Always read these instructions carefully before using the bulbs.

London's Paddington Station after dark. This interesting picture was taken on medium speed film. The exposure was 30 seconds at *f*11. Any camera with a "B" or "T" shutter setting could take a similar picture.

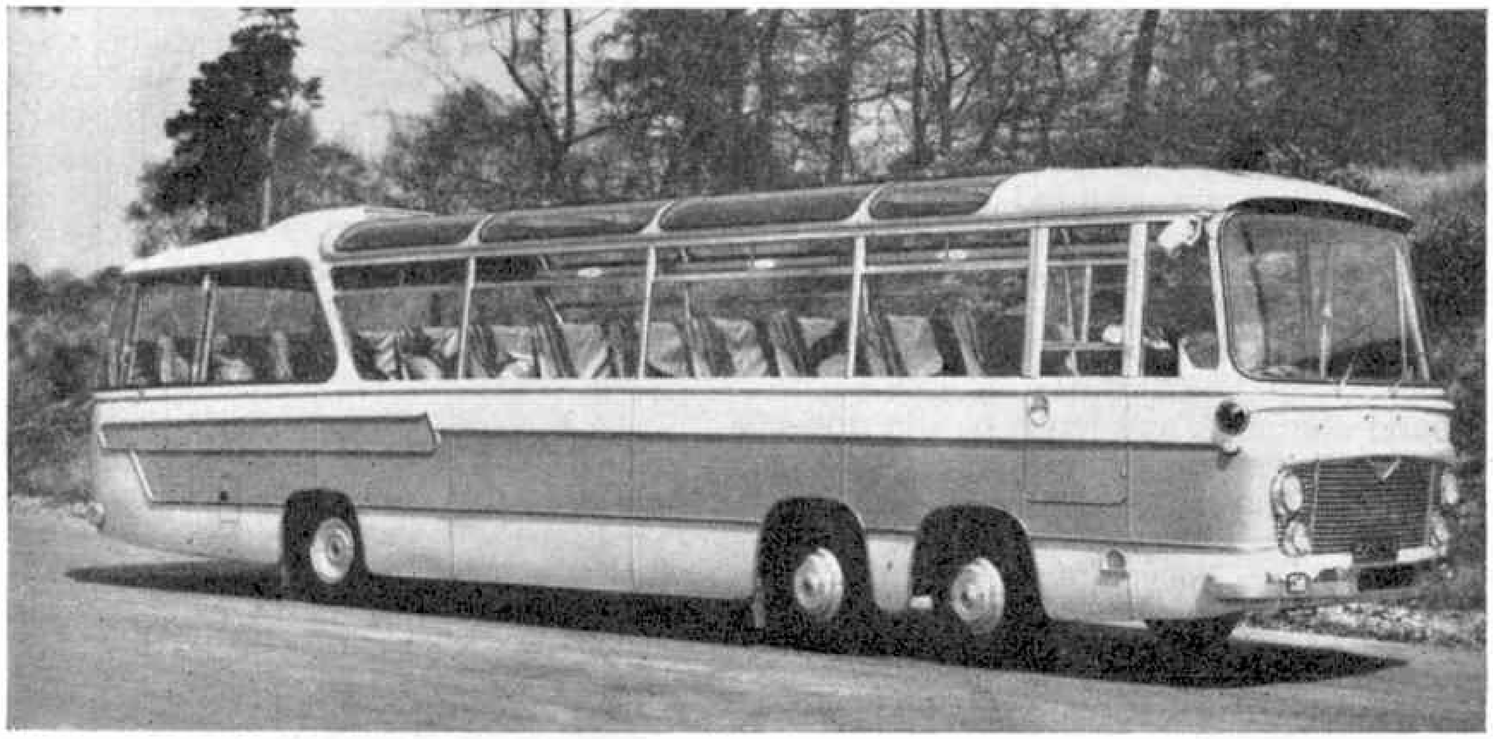


Flash light intensity falls off very rapidly with distance, so for best results make sure that all important parts of your picture are at roughly the same distance from the bulb. This is very important when you are photographing groups of people.

Modern flashbulbs are very safe but they still do shatter sometimes. When taking close-ups of people, therefore, it is a good plan to use the plastic shield provided with many flash guns. If *your* flash-gun does not have one of these guards, a single layer of a clean handkerchief tightly stretched across the reflector will do. If you do this you will need more exposure, so open up by one stop (e.g. use *f* 5.6 if the Guide Number recommendation is *f* 8).

This time of the year there are plenty of opportunities for after-dark photography out of doors. You can use very fast films as we discussed last January or, with almost any film, you (*Cont. on page 511*)

Three Axles—And No Trolleybuses



THE heading summarises in five words my impressions of the 1962 Earl's Court Commercial Show. With an increasing number of authorities scrapping their trolleybus systems it no longer pays, apparently, to exhibit these vehicles. This is the first post-war show at which they have been absent. On the other hand, a real surprise to many viewers was the debut of the Bedford V.A.L. model with its twin front axles and smaller wheels, reminiscent of those queer "beasts" of the 'thirties—the Leyland "Gnus". The show model had an unladen weight of 6–10–1 and mounted a Duple "Vega Major" body with 52 seats. With the higher speeds now obtaining on our motorways such a coach could add an important safety element to road travel.

Perhaps an even more interesting exhibit was to be found on the Northern Counties stand in the form of Walsall No. 1, a Daimler "Fleetline" with a 25 ft. 6 in. body instead of the normal 30 ft. one. Like Barton 861 at the previous show it has wrap-round windows at the front. Round this curved front nearside bulkhead is a bench seat to hold some four passengers, who are, therefore, clustered round the driver's left side. It made me wonder—

What is this life if full of care,
We have no time to sit *and stare?*

(With grateful apologies to the poet concerned!)

This fascinating vehicle, registered 1 UDH, has a staircase which brings the passenger right up to the front windows on the top deck. He then has to avoid treading on the toes of those seated on the front seat before finding a place of his own. One major fault with this 64-seat body, which was common to many other designs, was that in spite of its overall height of 13 ft. 9 in. the ceilings were too low for comfort for anybody more than 5 ft. 9 in. tall. This seems a strange trend when the average height is steadily going up in this country.

* * * *

At this show two double-decker chassis seemed to reign supreme—the Leyland "Atlantean" and the Daimler "Fleetline". The former was represented by 324 YNU, a 73-seater in the livery of Blue Bus Services of Willington, which was in the demonstration park. This particular vehicle had some of the finest upholstery seen at Earl's Court, where, on the whole, economic reasons seemed to have dictated austerity. Manchester Corporation 4590 (4590 NE) had an M.C.W. 76-seat, 14 ft. high body with a spiral staircase, which would have done credit to any medieval castle, with guide rails on the platform to separate the climbers from those seeking rest on the lower deck, and rather unusual cylindrical plastic air vents which could be rotated at the top of some of the windows. One "Fleetline" was Sunderland 251 (TGR 551) with a Roe 70-seat body. Turning to the Leyland PDR 1 (alias the Atlantean) Salford 150 (TRJ 150) had a 77-seat M.C.W. body, while a 78-seat version by the same bodybuilders was to be seen in the livery of Liverpool Corporation (L 501, 501 KD).

I found the Albion "Lowlander" rather old fashioned in appearance, with its radiator shaped like a Dutch gable. Two models were on display in the main hall—Central S.M.T. No. A1 (EGM 1) and East Midlands No. D162. The sole Guy "Wulfrunian" this year was one belonging to its native Wolverhampton (No. 71, 4071 JW) and it had a 71-seat body with air suspension throughout.

Much has been written lately about the new A.E.C. "Renown", which is to replace the "Bridgemaster" (and presumably the "Routemaster", too). In the park was the prototype of the new London Transport RX class with a 75-seat Park Royal body. I found the ventilation poor upstairs when the windows were closed. Another model was on the exhibition floor in a blue and white livery, one unusual feature of this particular bus being a strip light half way up the wall of the staircase. London Transport RMF 1254, the experimental "Routemaster" with a 30 ft. 69-seat, front-entrance body, was also on view to the public for the first time, before going to join the RML class on route 104.

A.E.C., I felt, did not shine in the double-deck field but they stole the limelight in single-deckers and coaches with a whole bevy of "Reliances". In the park stood a handsome 36-footer with an AHU470 engine and a 46-seat Park Royal body in the livery of East Kent (537 FN). This, like a similar 49-seater for Aldershot and District (No. 466, 466 FGG), inside, had a cage for luggage in the interior, at the rear. A 590 model sold to Harris Motors, of Grays, had one of the new 49-seat Harrington "Grenadier" bodies. A third body builder to tackle the "Reliance" was Duple, with its "Continental" 51-seat body in the demonstration park and a super-de-luxe model, on the floor, entitled the "Alpine Continental". This had only 42 seats, and had fixed windows ventilated by fresh air delivered to each seat, together with window demisters controlled by the passengers.

* * * *

Main rival of the "Reliance", the Leyland "Leopard", appeared in the forms of Duple (Northern) "Dragonfly", with 49 seats, Western Welsh 602 (602 BBO) with a Willowbrook B54F body having wide entrance steps and cut-away rear, North-Western 952 with a similar Alexander body, Midland Red 5145 (5145 HA) with an M.C.W. B54F body, another 54-seat body by Marshalls (entitled the "Comagna"—one to catch the Common Market eye?) and, finally, Southdown 1160 (160 AUF) with a rather squarish Weymann "Castilian" 45-seat touring body.

As well as the V.A.L. there was the usual batch of Bedford S.B.5s and Thames "Traders" to appeal to the small coach proprietor, and it was interesting to note the number of coach bodies bearing three pairs of headlamps.

One final note. With 54-seat single-deckers now appearing, we imagine that we have drawn nigh unto the ultimate—but on the demonstration park was a 120-seater, 70-foot trailer, by Sparshatts, to be towed behind a Scammel crane-tractor unit—so we still have a long way to go!

The new Bedford V.A.L. twin-steer passenger chassis, mounting a Duple Vega Major 52-seater luxury coach body, pictured undergoing pre-production tests. The front entrance body is of composite construction, and is one of several designed and built for the chassis. Photograph by Vauxhall Motors Ltd.

CALLING ALL BUS SPOTTERS

By David Kaye

Air News—(*Continued from page 487*)

the pilot was able to tap the sides of the building with the steel ball and soon succeeded in making some sizeable holes in the wall.

Kaiser-Nelson believe it is possible to demolish completely large buildings by this technique in a few hours, compared with several weeks by the use of a crane and two years by manual labour. They also claim that it will be safer, as there have been cases where a steel demolition ball has whiplashed and overturned the crane that was swinging it. The helicopter has a quick-release mechanism which enables the pilot to release the ball if it swings viciously or gets wrapped round a girder. The helicopter can, of course, also tackle higher buildings than can a crane.

The Modern British Winter—

(*Continued from page 489*)

only a few mild spells. Gone is the old-fashioned March "heatwave", and in its place we can only expect a few mild days (generally near the beginning of the month) before cold easterly winds set in and give us low temperatures—but less snowfall—than either of the two previous months. In time, March conditions may improve but there seems little likelihood of this at present. Spring temperatures have decreased and autumn temperatures increased during quite recent times, and this obviously related feature of our climate may become a semi-permanent one.

Dinky Toys News—

(*Continued from page 491*)

or fog, therefore, the only winter condition we can reproduce is snow for which we use cotton wool or salt. It is surprising how a little common table salt can transform a layout simply by sprinkling it about, yet it must not be used haphazardly but very carefully and not too evenly. For example, ground behind hedges or sheltered by buildings would only have a thin covering, whereas the snow in front of objects would often be in deep drifts. Also you should be careful when covering roofs of buildings. Snow usually melts around chimneys and tends to slip down from the apex of sloping roofs. So you see, even preparing a Dinky Toys layout is something of an art. One final hint; if you have trees on your layout remember to make them wintry in appearance, too.

Railway in a Loft—

(*Continued from page 501*)

a further form of railway motive power, perhaps in the shape of the Hornby-Dublo Suburban Electric Train Set, is likely to appear.

If this scheme goes through, connections for passengers at two of the main stations on the surface level tracks are to be arranged, while it is possible, I imagine, that there will be some surface extension from the underground section, a state of affairs that does actually exist on the Mersey Line and which is found also on several routes served by London Transport electric trains.

There is plenty of scope for this sort of thing where the owner of a layout is blessed with a generous amount of space for baseboard and other structures.

"Are you anybody?"

Road and Track—

(*Continued from page 483*)

V–8 power unit to the stage at which it can win races. While this means that firms like Cooper and Lotus could continue next season with the present engines, any further increase of power would have to be found by their own mechanics and, of course, there will be no new Coventry Climax engines to compete against Ferrari, Porsche and the Japanese firm of Honda, coming into racing next year.

Coventry Climax were really talked into racing by the combined efforts of John Cooper, Rob Walker and Roy Salvadori, who all played a big part in the early development of the old four-cylinder Coventry Climax racing engine. It emerged as a two-litre in 1957 and was gradually enlarged and partly re-designed until it became a full-scale 2½-litre Grand Prix engine in 1959, sweeping aside all opposition to help Cooper win the World Championship both in 1959 and 1960.

The new V–8 first appeared last year, but like all new ventures had its teething troubles and only this year has it added reliability to its wonderful performance. Out of eight *Grandes Epreuves* this season, the V–8 Coventry Climax has won four, three going to Jimmy Clark's Lotus and the first race of the season, the Monaco Grand Prix, to Bruce McLaren's Cooper. In five years Coventry Climax engines have helped to win 22 major Grands Prix. I think this must be a record, and one of which both Coventry Climax and Wally Hassan, responsible for licking the engines into shape, have every reason to feel very proud.

Meanwhile, BRM engines will continue and I suspect more manufacturers will make use of them in the future, especially when they learn that the valve gear has now been successfully tested to over 13,000 r.p.m.

Specially for Photographers—

(*Continued from page 508*)

can take interesting time exposures, like this month's shot of Paddington Station. Your camera must be firmly supported on a tripod or similar stable stand and the subject, of course, should not be moving. Use a cable release if you possibly can. Exposures can be anything from 15 seconds at *f* 8 to several minutes, depending on the amount of light. Usually, about 30 seconds will do.

While your main subject must be stationary, do not worry if there is movement in other parts of your picture. People walking past, for instance, will not be in one position long enough to record on your film.

ANSWERS TO CHRISTMAS PUZZLES

A MOVING QUESTION

Using the following abbreviations: P (piano), B (bookcase), W (wardrobe), C (cabinet), T (table) make the following moves: P B W P C T P W B C W P T W C B P C.

LUCKY GUESS?

15/– altogether.

SOLUTION TO CROSSWORD PUZZLE

Across

1. Pillow-case, 7. Adorn, 8. Forfeit, 10. Treasure, 11. Aged, 13. Charms, 15. Wintry, 17. Ajar, 18. Yuletide, 21. Stew-pot, 22. Osier, 23. Present-day.

Down

1. Prone, 2. Lonesome, 3. Offers, 4. Card, 5. Sleight, 6. Santa Claus, 9. Teddy-bears, 12. Pine-wood, 14. Amateur, 16. Sultan, 19. Icily, 20. Opus.

HOW MANY TRIANGLES?

There are 35 triangles in all.

AUNTIE'S AGE

Aunt Amelia was 62.

A CROSSWORD THAT IS DIFFERENT

SPEED TEST

Half a dozen times half a dozen dozen (432) is greater than a dozen and a half times a dozen and a half (324).

Fireside Fun

TV Announcer: "And, now, for your final question to win our giant jackpot, just tell me what three letters are used to get help in distress?"

Contestant: "I.O.U."

"So that's why he wanted 4,694 Meccano Outfits."

A very small boy came home dejectedly from his first day at school.

"Ain't goin' tomorra," he spluttered.

"And why not?" his mother asked.

"Well, I can't read and I can't write and they won't let me talk, so what's the use."

* * * *

"I think my brother is getting absent-minded."

"What makes you think so?"

"Well, this morning as soon as he came to the station, he thought he had left his watch at home, and then took it out of his pocket to see if he had time to run home for it."

* * * *

In London, a man visited a landlord enquiring for a room to rent. Asked for the rent, the landlord said, "The room on the ground floor would cost £10, on the first floor £7, and on the second floor £5, per month."

The man was about to leave, when the landlord said, "Do you think the charges are too high?"

"No, not at all. I was just thinking that the building is not high enough."

"He keeps crying, mother . . . says it's not like a real train because it starts every time."

"How do you manage without a speedometer?"

"Oh, it's quite simple. When I get to 15 miles an hour the bumpers start rattling; at 25 the windows begin to rattle; at 30 the engine starts knocking—and that's as fast as the old bus can go!"

* * * *

An hotel manager was giving advice to his new receptionist.

"Always ask for money in advance when people have luggage that is over-emotional", he said.

"Over-emotional?"

"Yes, too easily moved."

* * * *

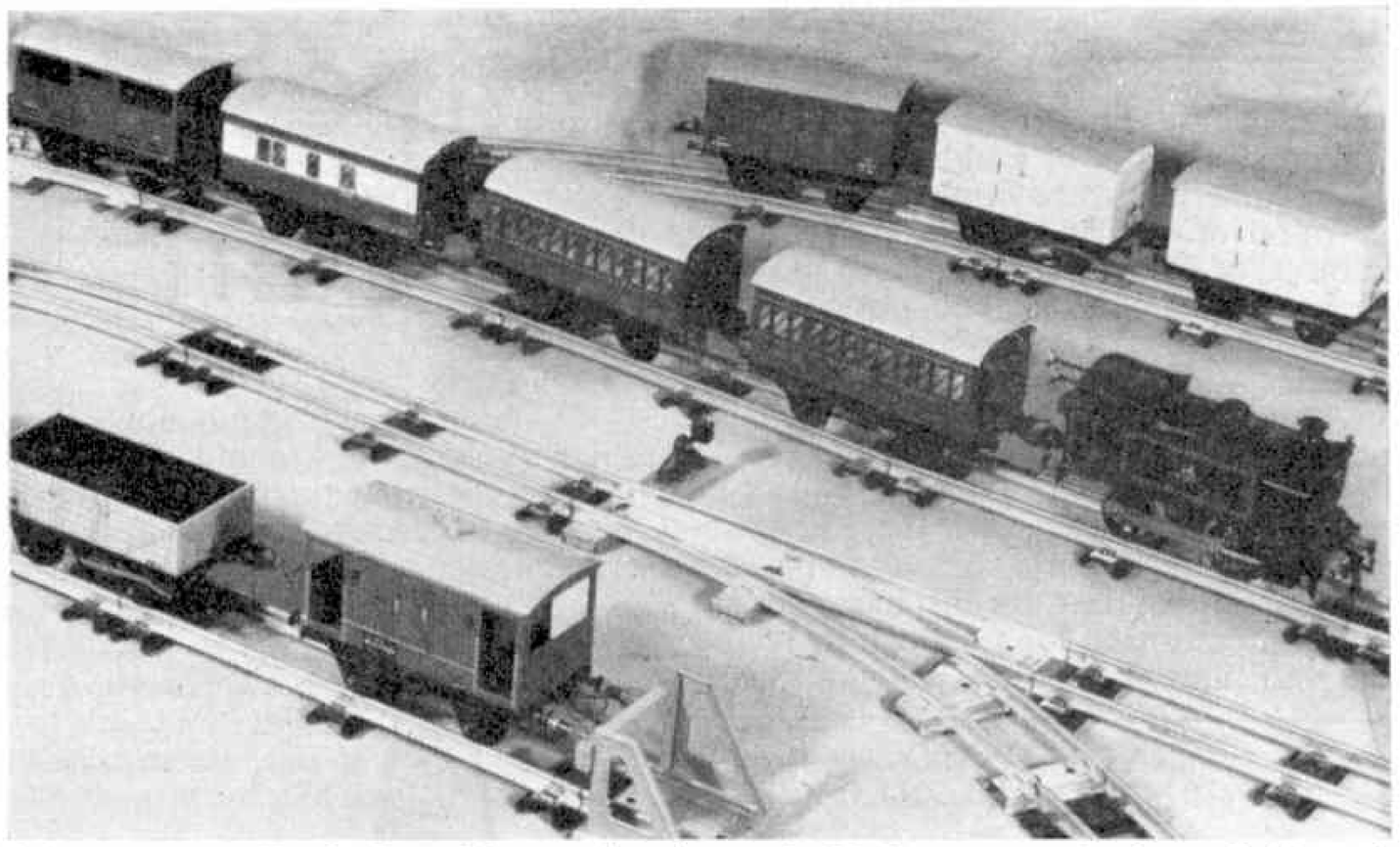
"Aren't you afraid your creditors might see you at this expensive restaurant?"

"No, this is the safest place. They can't afford to come here."

"Somebody at this address ordered a TV for Christmas."

WHEN YOU DOUBLE YOUR TRACK

By "Tommy Dodd"



A busy scene on a Hornby Gauge 0 layout, where the standard Rails are arranged to form a double track main line.

LAST month, we had some simple track notes that I hope were useful to many young readers who own Hornby Gauge 0 Clockwork Trains. In their earliest stages, Hornby railways usually consist of a single line of rails only, with sidings or branches here and there when Points have been added to the oval track with which most of us begin. With a single track, only one train can run on the main line at one time. There may be other engines, or complete trains, but these have to wait in a siding or a loop while the first train is in motion. In this way we follow the real railway principle of having only one train in a given section at once, so safety in working is ensured.

Most of us, though, like to see two trains passing one another on the run and for this a double track is necessary. There is something very satisfying about such a layout and with Hornby Tinplate Rails it is not difficult to arrange one. If the original single track is oval, the additional line of rails needed to form double track will probably follow the same course. It is simple enough to lay straight tracks side by side, but when we come to the curves, one or two little problems arise. As the Curved Rails are necessarily of the same standard radius on inside and outside track, we have to make the straight sections of the outer track a little longer than those of the inner track, so that the respective sets of rails remain throughout at a suitable distance apart. If you make your outer track longer than your inner one by one Straight Rail, or its equivalent, matters will work out satisfactorily.

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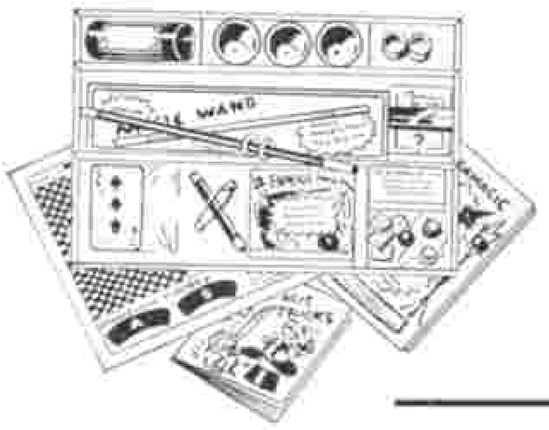

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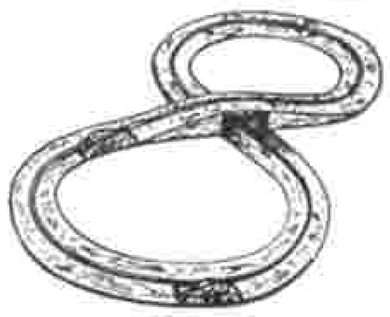

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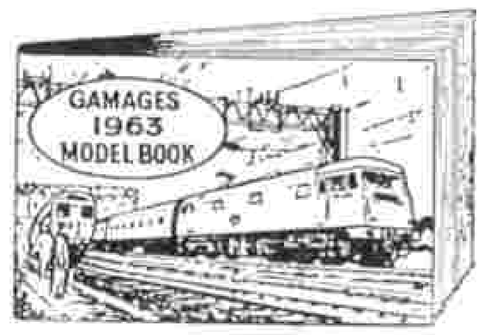

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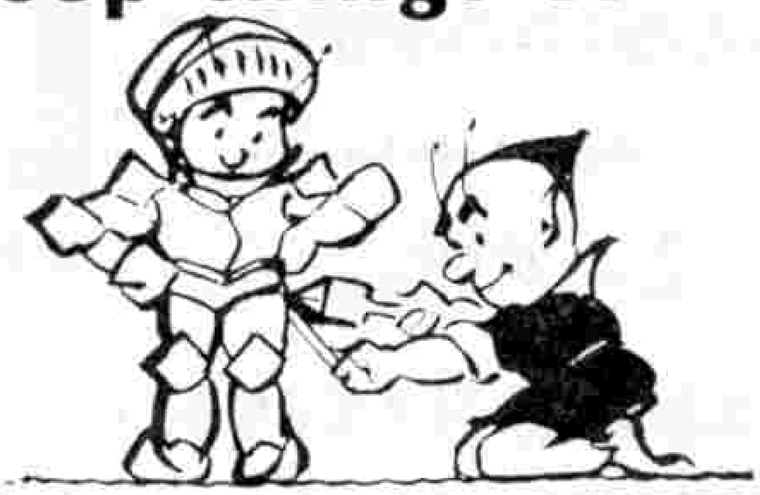

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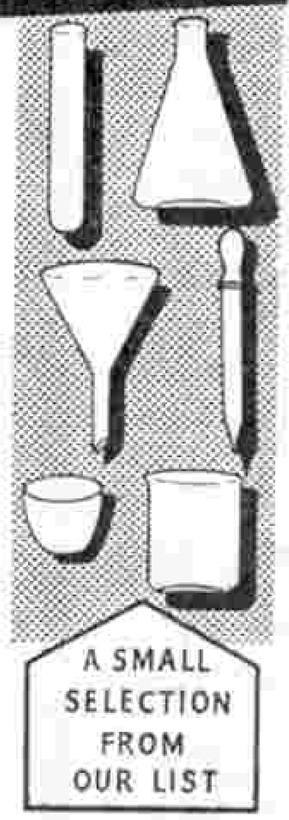

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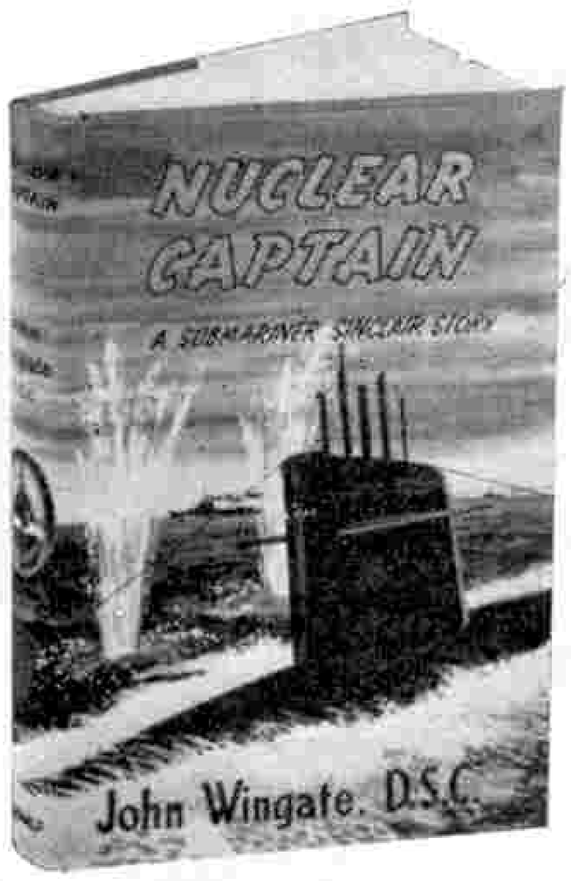

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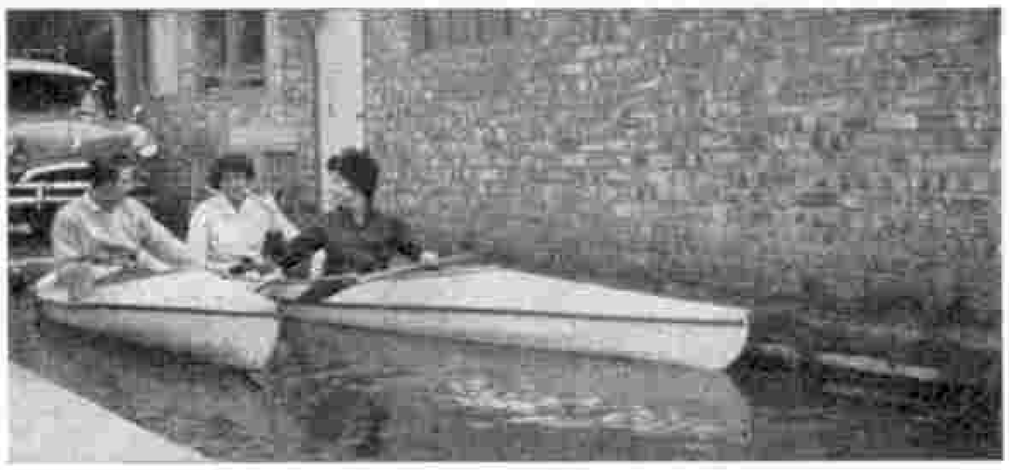

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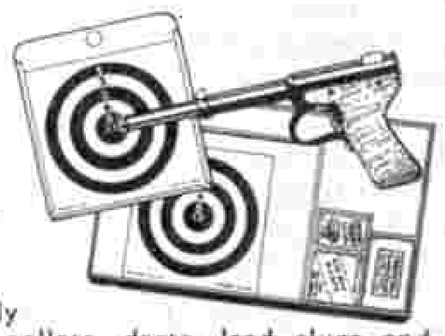

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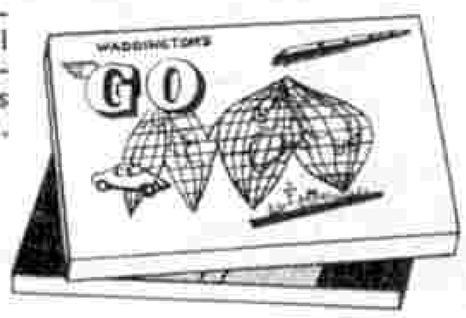

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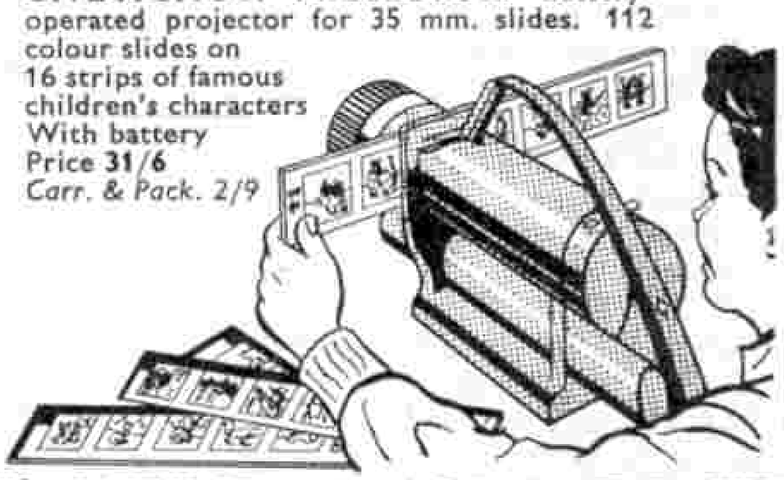

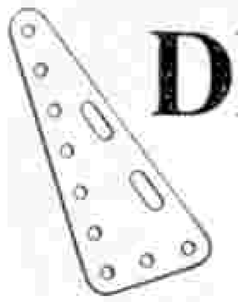

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Listed below are some of the dealers who sell Meccano accessories and spare parts. This is intended to aid enthusiasts—and there are many of them—who constantly require additional spare parts for their Sets. All dealers can of course order Meccano spare parts for their customers, but those listed here are among our spare part specialists.

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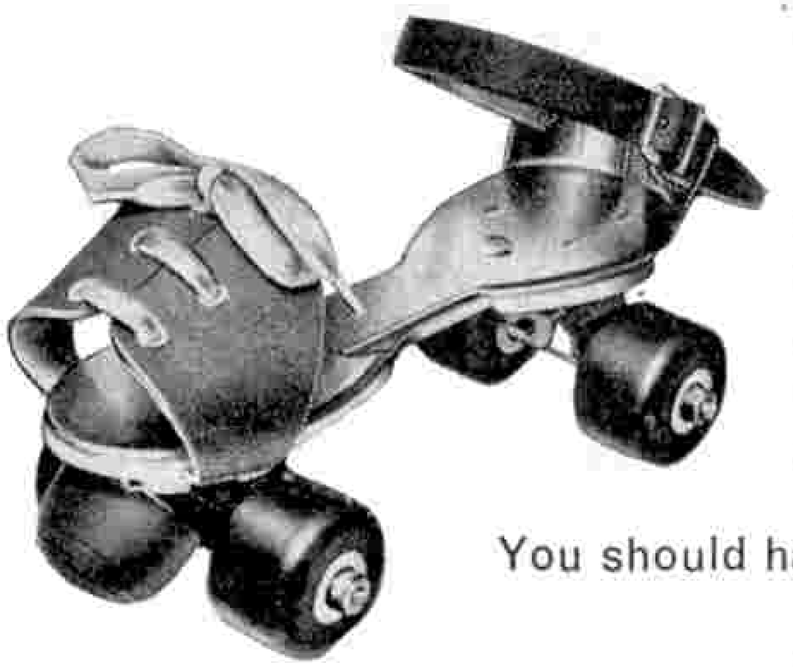

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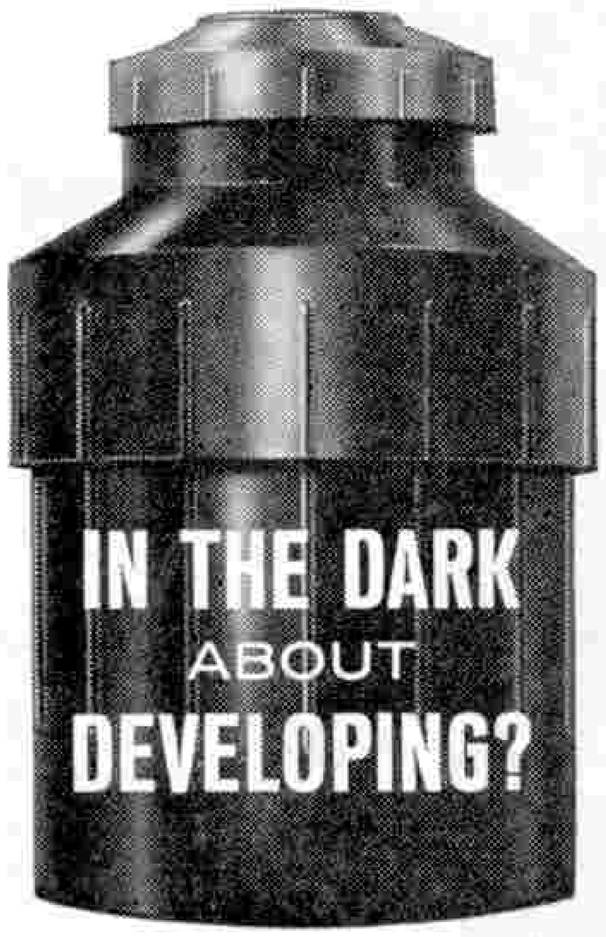

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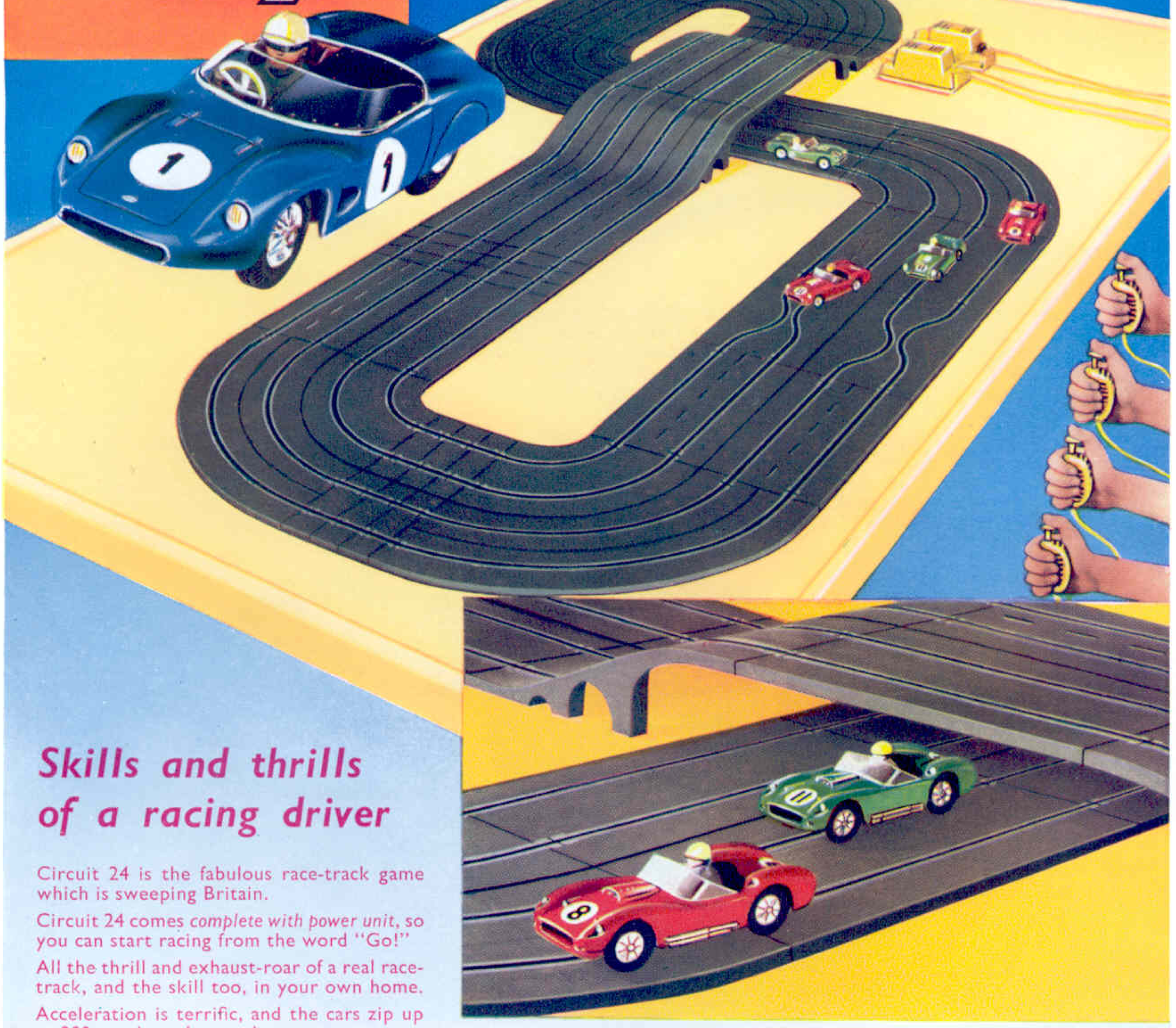

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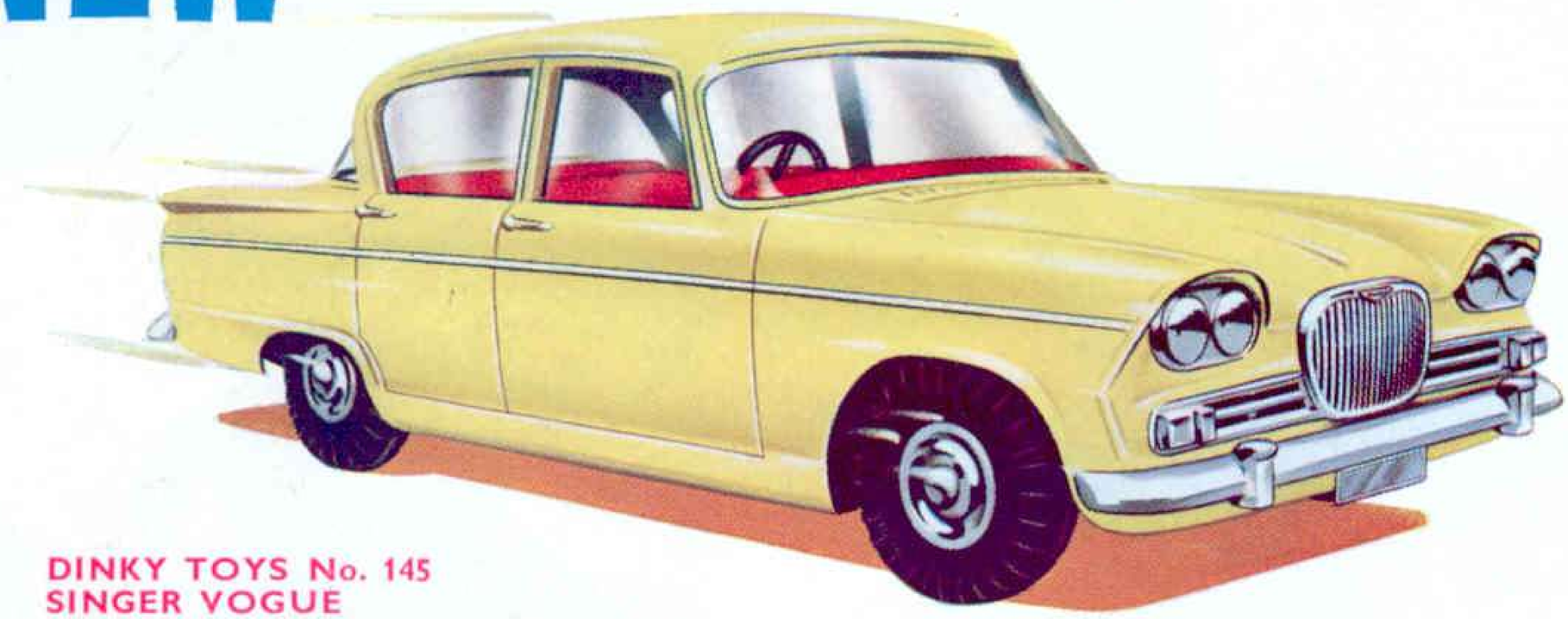

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